United States Court of Appeals

for the

District of Columbia Circuit

TRANSCRIPT OF RECORD

No. 11,475

JOINT APPENDIX

United States Court of Appeals

For the District of Columbia Circuit

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For the
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Joseph W. Stewart
CLERK

727

New Wrinkle, Inc., and William A. Waldie,
Appellants,

vs.

ROBERT C. WATSON
~~John A. Marzall~~, Commissioner of Patents,
Appellee.

**Appeal from the United States District Court
for the District of Columbia**

WILSON - EPES PRINTING CO. - RE 6003 - WASHINGTON 1, D. C.

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United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 11,475

NEW WRINKLE, INC., and WILLIAM A. WALDIE,
Appellants,

vs.

JOHN A. MARZALL, Commissioner of Patents,
Appellee.

Appeal from the United States District Court
for the District of Columbia

JOINT APPENDIX

77 Filed Jul 12 1949 Harry M. Hull, Clerk

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

New Wrinkle, Inc. and William A. Waldie,
Dayton, Ohio
Plaintiffs,

v.

Lawrence C. Kingsland, Commissioner of Patents,
Washington, D. C.,
Defendant.

Civil Action
No. 2964-'49

Bill of Complaint
For the Issuance of a Patent

TO THE HONORABLE JUDGES OF THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA:

Plaintiffs bring this cause of action and state as follows:

1. Plaintiff, New Wrinkle, Inc. is a corporation organized and existing under the laws of the State of Ohio, having a place of business at No. 1771 Springfield Street, Dayton, Montgomery County, Ohio; and plaintiff William A. Waldie is a citizen of the United States, residing at 69 East Dixon Avenue, Dayton, Montgomery County, Ohio, and Plaintiffs bring this suit jointly.

2. The defendant, Lawrence C. Kingsland, is Commissioner of Patents, of the United States, having his official residence in the District of Columbia, and is sued in his official capacity as said Commissioner of Patents of the United States.

3. This suit arises under the patents laws of the United States and this bill is filed in accordance
78 with the provisions of Sec. 4915 of the Revised Statutes, Title 35, Sec. 63 U. S. C. A.

4. That William A. Waldie, one of the plaintiffs, prior to March 8, 1946 was the true, original and first inventor of new and useful improvements in or relating to Wrinkle Catalyst, which were not known or used by others in this country before his invention or discovery thereof and were not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application for a patent hereinafter referred to, and were not in public use or on sale in this country for more than two years prior to said application, were not abandoned, and were not patented in any foreign country on an application filed by either of said plaintiffs or their legal representatives or assigns more than twelve months prior to the filing of said application in the United States.

5. That plaintiff William A. Waldie, being entitled to Letters Patent of the United States for said improvements in Wrinkle Catalyst under the provisions of the statutes of the United States and in accordance with the rules of practice of the United States Patent Office, filed an application for Letters Patent in due and proper form with the defendant, or his predecessor in office, as Commissioner of Patents for said improvements. Said application complied with the statutes and rules in such cases made and provided and was filed in the United States Patent Office on March 12, 1946 and was given Serial No. 653,932, all as will more fully and at
79 large appear by said application or a duly certified
copy thereof and the proceedings relating thereto had in the Patent Office, here in court to be produced by the plaintiffs.

6. That said plaintiff, William A. Waldie, by a proper instrument in writing, executed by him and recorded in the records of the Transfers of Patents in the United States Patent Office, sold, assigned and transferred to New Wrinkle, Inc., the other plaintiff herein, the entire right, title, and interest in and to the invention disclosed in said application, Serial No. 653,932, and in and to the Letters Patent expected to issue thereon, whereby said New Wrinkle Inc. became invested with and now owns the entire right, title, and interest in and to the said invention and the Letters Patent to issue therefor, and as will more fully and at large appear by said assignment or a duly certified copy thereof in court to be produced.

7. That said application has been duly prosecuted in accordance with the laws of the United States and the Rules of Practice of the United States Patent Office.

8. That a patent on said application, including and embodying Claims 1 to 11 inclusive, has been refused by the Commissioner of Patents, the defendant herein.

9. That said application was passed upon by the Primary Examiner, who finally refused said claims numbered 1 to 11 inclusive thereof in an action dated October 11, 1948, on the following grounds: that the invention defined by said claims lacked patentable novelty over the prior art disclosed by the following United States patents:

Waldie	2,392,346	January 8, 1946
Root	1,883,408	October 18, 1932
Root	1,950,417	March 13, 1934;

that claims 5 to 8 inclusive were too broad; and that all of the said claims 1 to 11 inclusive were aggregative.

80 10. That the Plaintiffs believed they were entitled to said claims 1 to 11 inclusive and took

appeal to the Patent Office Board of Appeals from the final rejection of these claims by the Primary Examiner on December 5, 1947, said claims reading as follows:

1. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising from 2 to 3 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate an lead oxides.

2. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent selected from the group consisting of bentonite and silica gel.

3. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising 2 parts by weight of maleic acid anhydride and 1 part by weight of manganese borate.

4. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkle coating compositions comprising an oil reactant and a texture producer in the proportion of from 1 to 4 parts by weight of oil reactant selected from the group consisting of maleic acid, maleic acid anhydride, and fumaric acid per one part of texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

5. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil

and a texture modifying powder comprising 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydyride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt, acetate and lead oxides.

81 6. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydyrating agent.

7. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder consisting of from 1 to 4 parts by weight of maleic acid anhydride per 1 part by weight of manganese borate.

8. In a method of producing oil compositions that dry to wrinkle-textured films the steps of heating non-conjugated double-bonded oil to a temperature of from 350° F. to 420° F. and adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

9. A wrinkle varnish composition comprising a non-wrinkling varnish base and a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

10. In a process of converting a non-wrinkle varnish composition to a wrinkling coating composition comprising the steps of heating the non-wrinkling varnish composition to a temperature of from 350° F. to 420° F., adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and heating the mixture to a temperature of from 570° to 620° for a time of approximately 30 minutes.

82 11. In a process of converting a non-wrinkle varnish composition to a wrinkle coating composition comprising the steps of heating a resin-oil dispersion to a temperature of approximately 350° F., adding 0.5 to 2.5%, with regard to the varnish, of a texture modifying powder consisting of 2 parts of maleic acid anhydride and 1 part of manganese borate to the dispersion, then heating it to a temperature of from 590° F. to 600° F. for a time of from 30 to 40 minutes, allowing the mixture to cool to 400° F. to 350° F., and then adding thinner and drier.

11. Under date of October 11, 1948, the Primary Examiner filed a statement in response to said appeal to the Patent Office Board of Appeals in which he relied upon the prior patents mentioned hereinabove and under which he relied in finally rejecting said aforementioned claims, and in which he relied on claims 5 to 8 inclusive being too broad and claims 1 to 11 inclusive being aggregative. All of this more fully and at large will appear by a certified copy of the file wrapper and contents of said Waldie application Serial No. 653,932 herein referred to, in court to be produced.

12. That after arguments were duly made on said appeal and a brief filed on behalf of said applicant, the Patent Office Board of Appeals on June 30, 1949, affirmed the decision of the Examiner, on the ground that the invention defined by the said claims 1 to 11 inclusive were not patentably distinct from the prior art relied upon by the Examiner and additionally affirmed the decision of the Examiner that claims 1, 2, 3 and 4 were properly rejectable as an aggregation. Said Patent Office Board of Appeals did not sustain the Examiner in his rejection of claims 5 to 8 as being too broad nor was the Examiner sustained in his rejection of claims 5 to 11 inclusive as being aggregative.

83 13. The plaintiffs aver that the decisions of the Primary Examiner and of the Patent Office Board of Appeals were erroneous and contrary to the law and contrary to the fact and do, therefore, disagree with the decision of the Commissioner of Patents, acting through the Patent Office Board of Appeals, as to said claims 1 to 11 inclusive, and allege that the subject matter of said claims is new and patentable, and that these claims should be allowed and a patent therefor granted to the plaintiffs. But the Commissioner has refused and still refuses to grant Letters Patent upon the aforesaid claims.

14. That the plaintiffs have taken no appeal to the United States Court of Customs and Patent Appeals from the aforesaid decisions of the Patent Office Board of Appeals and Commissioner of Patents.

15. Wherefore plaintiffs bring this Bill of Complaint under and in accordance with the provisions and statutes (Sec. 4915 U.S. Rev. St.; Comp. Stats. 9460; U.S.C.A. Title 35, Sec. 63) in such cases made and provided, and pray:

(a) That this Honorable Court may adjudge that the plaintiffs, New Wrinkle, Inc., and William A. Waldie, are entitled, according to law, to receive Letters Patent of the United States for said invention as specified in the aforesaid claims 1 to 11 inclusive, of said application Serial No. 653,932.

84 (b) That this Honorable Court may decree that the Commissioner of Patents be directed to allow the aforesaid claims 1 to 11 inclusive of said application Serial No. 653,932 for Letters Patent of William A. Waldie, filed March 12, 1946.

(c) For such other and further relief in the premises as the nature of the case may require and as to the Honorable Court shall seem meet and proper.

NEW WRINKLE, INC.
AND WILLIAM A. WALDIE
by /s/ Toulmin & Toulmin

Attorneys

/s/ John M. Mason
Munsey Bldg., Washington, D.C.

/s/ H. A. Toulmin, Jr.

/s/ F. J. Larkin

/s/ C. E. Crafts

Toulmin Bldg., Dayton, Ohio
Solicitors and of Counsel
for Plaintiffs.

• • • •

85 Filed Jul 19 1949 Harry M. Hull, Clerk

Answer To Complaint

To the Honorable the Judges of the United States District Court for the District of Columbia:

1, 2, 3. The defendant admits the allegations of paragraphs 1, 2 and 3 of the complaint.

4. He denies the allegations of paragraph 4.

5. He denies that the plaintiff is entitled to a patent as alleged in paragraph 5. He admits the remaining allegations of that paragraph.

6, 7, 8, 9, 10, 11, 12. He admits the allegations of paragraphs 6 to 12 inclusive.

13. He admits that he has refused and still refuses to grant plaintiffs a patent containing the claims set
86 forth in the complaint. He denies the remaining
allegations of paragraph 13 of the complaint. He states that the plaintiffs are not entitled to a patent containing the said claims for the reasons set forth in the examiner's statement and in the decision of the Board of Appeals and in view of the patents cited in paragraph 9 of the complaint. Profert of copies of the said statement, decision and patents is hereby made.

14. He admits the allegations of paragraph 14.

15. Paragraph 15 being the prayer no answer is made thereto.

/s/ E. L. Reynolds
Attorney for Defendant.

• • • •

87 Filed Dec 14 1949 Harry M. Hull, Clerk

Order

Upon consideration of the fact that John A. Marzall succeeded to the office of Commissioner of Patents on December 2, 1949, in place of Lawrence C. Kingsland, who resigned, and it appearing that there is substantial need for continuing and maintaining the above-entitled action, now therefore it is this 14th day of December 1949

ORDERED that John A. Marzall, Commissioner of Patents be and he is hereby substituted as party defendant in place of Lawrence C. Kingsland, formerly Commissioner of Patents.

/s/ H. A. Schweinhaut
Judge.

WE CONSENT:

/s/ Toulmin & Toulmin
Counsel for Plaintiff

/s/ E. L. Reynolds
Counsel for Defendant

and for John A. Marzall, Commissioner of Patents

* * * *

88 Filed Apr 4 1951 Harry M. Hull, Clerk

Stipulation

It is stipulated by and between Counsel for the parties, this Honorable Court consenting, that the record in the above-entitled case be corrected as follows:

Page 4, line 3, change "but" to "and";
Page 5, line 3, change "grounds" to "ground";
Page 6, line 19, change "Donovan" to "Dovan";
Page 18, line 4, delete "and";

Page 18, line 20, change "or" to "of";

Page 18, line 22, change "ppgment" to "pigment";

Page 29, line 14, change "...." to "Waldie application";

Page 30, line 6, delete the period and add "and cobalt acetate."

Page 40, line 19, change "without" to "with";

Page 43, line 1, delete "either";

Page 44, line 4, change "resinate" to "resin and";

Page 47, line 6, change "them" to "it";

Page 47, line 6, delete "liquid";

89 Page 47, line 13, change "the", second occurrence, to "a";

Page 47, lines 13 and 14, change "proposition" to "composition";

Page 53, line 17, after "the" insert "maleate";

Page 53, line 18, change "an infusion" to "a fusion";

Page 54, line 9, change "on" to "under";

Page 56, line 12, change "an" to "a";

Page 56, line 13, change "alkali" to "chemical agent";

Page 56, line 13, before "soda" insert "caustic";

Page 70, line 12, after "could" and before the comma, insert "combine";

/s/ Toulmin & Toulmin
Attorneys for Plaintiffs

Dayton, Ohio
April 3, 1951

/s/ E. L. Reynolds
Attorney for Defendant

Washington, D. C.
April 4, 1951

Consent hereto:

Judge, United States District Court

• • • •

90 Filed Feb 11 1952 Harry M. Hull, Clerk

Memorandum Opinion

This is a civil action under the provisions of Section 4915 of the Revised Statutes (35 U.S.C. sec. 63) in which the plaintiffs, William A. Waldie and New Wrinkle, Inc., assignee of said Waldie, the inventor, seek a judgment from this Court authorizing the defendant, Commissioner of Patents, to grant a patent to the plaintiffs based upon certain claims of the patent application of said Waldie, Serial No. 653,932, filed March 12, 1946, entitled "Wrinkle Catalyst."

The defendant admits that he has refused and still refuses to grant plaintiffs a patent for the reasons set forth in the examiner's statement and in the decision of the Board of Appeals, and in view of three prior patents. The claims were rejected as unpatentable over the prior art, and claims 1 to 4 were held to be aggregative.

The alleged invention relates to the art of producing coating compositions which will create a wrinkle finish when applied to objects and dried. The art to be patented consists of adding a dry texture modifying powder to a non-wrinkling oil (or a non-wrinkling varnish base)
91 that has been heated to a temperature of from 350 degrees F. to 420 degrees F. The mixture is then heated to around 600 degrees F. and allowed to cool. When the composition is sufficiently cool, a thinner is added. The dry texture modifying powder mentioned above is composed of: (1) an oil reactant, that is, maleic acid, maleic acid anhydride or fumaric acid; and (2) a texture producer, that is, manganese borate, cobalt acetate or lead oxide. This texture modifier is also referred to as a drier.

The oil reactant and the texture producer react with each other upon being added to the heated oil. Plaintiffs say that this reaction produces a stronger wrinkle and a harder finish than is previously known in the art. Basically then this alleged invention is the art of taking an oil reactant and a texture modifier (drier) and adding them *as a unit* to a heated non-wrinkling oil. It is claimed that the alleged invention differs from the prior art in that (1) the oil reactant and texture modifier (drier) are added as a single unit (which is referred to as a dry texture modifying powder) to the oil composition; (2) reaction between the oil reactant and texture modifier takes place in the heated oil composition to form cobalt maleate, another drier; (3) the process is simpler and time-saving; (4) a firmer wrinkle and a harder finish is produced because of the reaction between the oil in the texture modifier which results in a chemically different composition.

Claims 1 to 4, inclusive, define a dry mixture of the materials denominated a texture modifying powder; claims 5, 6, 7 and 9 define an oil or varnish composition which dries to a wrinkle finish, the composition comprising a non-wrinkling oil or varnish base and the texture modifying powder of claims 1 to 4; claims 8, 10 and 11 define the method or process of converting or producing a wrinkling oil or varnish from a non-wrinkling oil or varnish base comprising a two-stage heating process, the texture producing powder being added after the first stage.

92 The Patent Office rejected the claims because they failed to define invention over the prior art, and the Root and Waldie Patents are the ones relied upon. Root used a wrinkling oil, that is, the oil of the coating composition had properties which tended to produce a wrinkling finish. For his drier he used the same chemicals which the plaintiffs here call their texture producer. Waldie Patent No. 2,392,346 heated a non-wrinkling oil (with a resin added) to 400 degrees F., added an oil reactant and then heated to 550 degrees F., cooled the mix-

ture and then added a thinner and a drier (nuodex cobalt 6%). What the plaintiffs have done is add to a non-wrinkling oil or varnish simultaneously that which previously had been added sequentially. The finding of the Patent Office that the claimed invention was fairly anticipated by the prior art is reasonable. If a reasonable basis for the Patent Office's rejection of the application exists, the Court should not authorize the issuance of a patent. Furthermore, the plaintiffs have not established that the product of the alleged invention is substantially different from that which was produced under the prior art. Plaintiff Waldie did testify that as a result of adding the oil reactant and the texture modifier as a unit, he produced a harder finish and a firmer wrinkle, but there was no showing that the product produced by him under the method of his application is substantially different from that produced under the prior art. Where the result accomplished is substantially the same, steps taken concurrently or simultaneously are the equivalent of and not patentable over steps taken successively.

Claims 1 to 4, inclusive, relate to a mixture of the oil reactant and the texture modifier, which make up the dry texture modifying powder. This powder is prepared by mixing the acid and drier together. There is no showing that there is a chemical combination of these substances in the chemical mixture. Nor is there any showing that there is any new function or effect brought about 93 by their association in the mixture. The acid component and the drier component are known to the art as effective in wrinkle finish compositions, the former in Waldie and the latter in Root. There is no invention in combining or mixing them. Claims 1 to 4, inclusive, are aggregative.

Findings of fact and conclusions of law being contained in this opinion, no formal findings of fact and conclusions of law are necessary. Counsel for the defendant will prepare the appropriate judgment.

/s/ Edward M. Curran
Judge

* * * *

94 Filed Mar 7 1952 Harry M. Hull, Clerk

Judgment

This action came on to be heard at the January 1951 term and thereupon upon consideration thereof, it is this 7th day of March, 1952,

ADJUDGED that the complaint be and it is hereby dismissed, with costs against the plaintiffs.

/s/ Edward M. Curran
Judge

* * * *

96 Filed Apr 3 1952 Harry M. Hull, Clerk

Notice of Appeal

Notice is hereby given that New Wrinkle, Inc. and William A. Waldie, Plaintiffs, hereby appeal to the United States Court of Appeals for the District of Columbia from the Judgment entered in this action on the 7th day of March 1952.

/s/ Toulmin & Toulmin
Attorneys for Plaintiffs

/s/ H. A. Toulmin Jr.
/s/ D. C. Staley
308 West First Street
Dayton, Ohio
/s/ F. E. Drummond
Wyatt Building
H & 14th Streets & New York Avenue
Washington, D. C.
OF COUNSEL.

Receipt of a copy of the foregoing Notice is acknowledged this 3rd day of April 1952.

/s/ E. L. Reynolds
Solicitor,
United States Patent Office

* * * *

97 Filed Apr 3 1952 Harry M. Hull, Clerk

Cost Bond On Appeal

New Wrinkle, Inc. and William A. Waldie, appellants herein and Indemnity Insurance Company of North America, a corporation, organized and existing under the laws of the State of Pennsylvania, with its principal place of business in Philadelphia, Pennsylvania, and duly authorized to transact a general surety business in the District of Columbia, surety, appearing and submitting to the jurisdiction of the Court, hereby undertake for themselves and each of them, their and each of their heirs, executors, administrators, successors and assigns, to make good all taxable costs and charges, not exceeding the sum of two hundred and fifty dollars ($250) that the appellee may be put to or allowed if the appeal is dismissed or the judgment affirmed, or such costs as the appellate court may award if the judgment is modified.

98 The said surety hereon hereby irrevocably appoints the clerk of this Court as its agent upon whom any papers affecting its liability on this undertaking may be served.

Signed, sealed, and delivered this 1st day of April 1952.

NEW WRINKLE, INC.
By: /s/ H. E. Kroud
Secretary
/s/ William A. Waldie
INDEMNITY INSURANCE COMPANY
OF NORTH AMERICA

Surety holds authority from Secy. of Treas. to do business in D. C. and has a process agent therein.

Harry M. Hull, Clerk

By Robert C. Huey, Deputy Clerk
April 3, 1952

By: /s/ M. P. Weis
Attorney in Fact

Surety and amount approved.................................1952.

....
Justice.

99 POWER OF ATTORNEY

INDEMNITY INSURANCE COMPANY OF NORTH AMERICA
PHILADELPHIA

Know all men by these presents: That the INDEMNITY INSURANCE COMPANY OF NORTH AMERICA, a corporation of the Commonwealth of Pennsylvania, having its principal office in the City of Philadelphia, Pennsylvania, pursuant to the following By-Law, which was adopted by the Board of Directors of the said Company on July 12, 1920, to wit:

"Article XII, Section 1.—The President, or any Vice-President, shall have power and authority to appoint resident Vice-Presidents, resident Assistant Secretaries and Attorneys-in-fact and to authorize them to execute on behalf of the Company and attach the Seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof."

does hereby nominate, constitute and appoint M. P. Weis, of the City of Dayton, State of Ohio, its true and lawful agent and attorney-in-fact, to make, execute, seal and deliver for and on its behalf, and as its act and deed any and all bonds and undertakings in penalties not exceeding two hundred thousand dollars ($200,000.00) each in its business of guaranteeing the fidelity of persons holding places of public or private trust, and in the performance of contracts other than insurance policies, and executing and guaranteeing bonds or other undertakings not exceeding two hundred thousand dollars ($200,000.00) each as aforesaid, required or permitted in all actions or proceedings or by law required or permitted.

All such bonds and undertakings as aforesaid to be signed for the Company and the Seal of the Company attached thereto by the said M. P. Weis, individually. And the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Company, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Philadelphia, Commonwealth of Pennsylvania, in their own proper persons.

IN WITNESS WHEREOF, the said R. S. Robins, Vice-President, has hereunto subscribed his name and affixed the corporate seal of the said INDEMNITY INSURANCE COMPANY OF NORTH AMERICA this 20th day of February 1952.

INDEMNITY INSURANCE COMPANY
OF NORTH AMERICA
(seal)
by R. S. Robins
Vice-President

STATE OF PENNSYLVANIA)
COUNTY OF PHILADELPHIA)
ss.

On this 20th day of February, A. D. 1952, before the subscriber, a Notary Public of the Commonwealth of Pennsylvania, in and for the County of Philadelphia, duly commissioned and qualified, came R. S. Robins, Vice-President of the INDEMNITY INSURANCE COMPANY OF NORTH AMERICA to me personally known to be the individual and officer described in, and who executed the preceding instrument, and he acknowledged the execution of the same, and, being by me duly sworn, deposeth and saith, that he is the officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the corporate seal of said Company, and the said corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority and direction of the said corporation, and that By-Law, Article XII, Section 1, adopted by the Board of Directors of said Company, referred to in the preceeding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Philadelphia, the day and year first above written.

(Seal) Samuel Doak
Notary Public.

My commission expires January 29, 1955.

I, the undersigned, Assistant Secretary of INDEMNITY INSURANCE COMPANY OF NORTH AMERICA, do hereby certify that the original POWER OF ATTORNEY, of which the foregoing is a full, true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of the Corporation, this 1st day of April 1952.

(Seal) Illegible
Form No. 3 Assistant Secretary
B-80 15M 6-4-51

* * * *

100 Filed May 2 1952 Harry M. Hull, Clerk

Plaintiff's Statement of Points On Its Appeal

New Wrinkle, Inc. and William A. Waldie, Plaintiffs, hereby state that the following are the points involved on the appeal of the Judgment on the complaint herein:

1. The District Court erred in indicating as a fact that the mixture of the non-wrinkling oil and the dry texture modifying powder is heated to around 600° F.

2. The District Court erred in finding that the finding of the Patent Office that the claimed invention was fairly anticipated by the prior art is reasonable.

3. The District Court erred in not establishing any basis from which it could be fairly inferred that the finding of the Patent Office is reasonable.

4. The District Court erred in following the finding of the Patent Office that the claimed invention was fairly anticipated by the prior art, as no reasonable basis is established by the Court from which it could be fairly inferred that a reasonable basis for the rejection of the Patent Office exists.

101 5. The District Court erred in not authorizing the issuance of a patent as no reasonable basis is given by the Court from which it could be established that the finding of the Patent Office was reasonable.

6. The District Court erred in finding that the Plaintiffs had not established that the product of the invention is substantially different from that produced under the prior art.

7. The District Court erred in assuming that the result accomplished by the Plaintiff, Waldie, is substantially the same as the prior art.

8. The District Court erred in finding that steps of a process taken concurrently or simultaneously are equivalent of and not patentable over steps taken successively.

9. The District Court erred in finding that there was no showing that there is any new function or effect brought about by the association of the chemical ingredients in the dry texture modifying powder.

10. The District Court erred in finding that there is no invention in combining or mixing the acid and drier together in the texture modifying powder.

11. The District Court erred in finding that claims 1 to 4 inclusive are aggregative.

12. The District Court erred in not finding that claims 1 to 11 express patentable invention over the prior art.

13. The District Court erred in adjudging that Plaintiff's complaint should be and, therefore, was dismissed.

/s/ Toulmin & Toulmin
Attorneys for Plaintiffs

Dayton, Ohio,
April 24, 1952.

/s/ F. E. Drummond
Wyatt Building
Washington, D. C.

Receipt of a copy of the foregoing Statement of Points on Appeal is hereby acknowledged this ...... day of April 1952.

/s/ E. L. Reynolds
Solicitor, United States
Patent Office
Attorney for Defendant

Washington, D. C.,
April 25, 1952.

* * * *

102 Filed May 2 1952 Harry M. Hull, Clerk

Stipulation

It is stipulated and agreed by and between counsel for the parties in the above entitled cause, subject to the approval of this Honorable Court, that the time within which the Plaintiff-Appellant may file the record on appeal and docket the appeal in this case pursuant to Rule 73 (g) of the Rules of Civil Procedure may be and hereby is extended to and inclusive of July 2, 1952.

TOULMIN & TOULMIN

/s/ Toulmin & Toulmin
Attorneys for Plaintiff-Appellant

/s/ F. E. Drummond
Washington, D. C.

Dayton, Ohio,
April 24, 1952.

/s/ E. L. Reynolds
Solicitor U. S. Patent Office,
Attorney for Defendant-Appellee

Washington, D. C.
April 25, 1952.

Approved this 2nd day of May, 1952.
/s/ Walter M. Bastian

Judge, District Court of the United States
For the District of Columbia

* * * *

103 Filed May 2 1952 Harry M. Hull, Clerk

Order

It is hereby ordered that the physical exhibits in the above entitled cause presented before the United States District Court for the District of Columbia, being Plaintiff's Exhibits 2 to 11 inclusive, be transmitted as physical exhibits to the United States Court of Appeals for the District of Columbia.

/s/ Walter M. Bastian
Judge, United States District Court

We consent to the above Order.

/s/ Toulmin & Toulmin
Attorneys for Plaintiff
/s/ F. E. Drummond
Wyatt Building
Washington, D. C.

Dayton, Ohio,
April 24, 1952.

/s/ E. L. Reynolds
Solicitor, United States
Patent Office
Attorney for Defendant

Washington, D. C.
April 25, 1952.

* * * *

104 Filed May 16 1952 Harry M. Hull, Clerk

Designation of Contents of Record on Appeal

TO: THE CLERK OF THE UNITED STATES
DISTRICT COURT FOR THE DISTRICT
OF COLUMBIA:

It is hereby stipulated and agreed, by and between counsel for the parties herein, that the Transcript of the

Record in the above entitled cause to be filed in the Office of the Clerk of the United States Court of Appeals for the District of Columbia under the appeal herein shall include in the said transcript the following pleadings, proceedings, papers and exhibits to be contained in the Record on Appeal, to wit:

1. Caption (usual form)

2. Bill of complaint filed by the plaintiffs-appellants.

3. Answer to the bill of complaint filed by the defendant-appellee.

105 4. Order entered December 14, 1949, substituting John A. Marzall, Commissioner of Patents, as defendant, in place of Lawrence C. Kingsland.

5. Typewritten transcript of the proceedings and evidence at the trial before the Honorable Judge Curran.

6. Plaintiff's Exhibit 1, certified copy of the Waldie application 653,932.

7. Defendant's Exhibit 1, including the patents to Waldie 2,392,346, and Root 1,883,408 and Root 1,950,417.

8. Defendant's Exhibits 2 and 3.

9. The following original physical exhibits are to be filed with the transcript.
(a) Plaintiff's physical Exhibits 2 to 11 inclusive.

10. Stipulation dated April 3 and 4, 1951, correcting the aforementioned typewritten transcript of the proceedings and evidence.

11. Memorandum Opinion of the Honorable Judge Curran filed February 11, 1952.

12. Judgment filed March 7, 1952.

13. Notice of Appeal of plaintiffs.

14. Cost Bond on Appeal and Power of Attorney for Surety attached thereto.

15. This stipulated Designation of the Contents of the Record.

16. Certificate of the Clerk of the United States District Court for the District of Columbia as to the correctness of the transcript of the record in this cause.

17. Statement of Points to be relied on by Appellant.

106 18. Any further stipulation between the parties hereto concerning the record on this appeal of the time for the docketing thereof, and any and all orders of the Court with regard thereto.

/s/ Toulmin & Toulmin
Attorneys for Plaintiffs-Appellants

Dayton, Ohio,
April 24, 1952.

/s/ E. L. Reynolds
Solicitor, United States Patent Office
Attorney for Defendant

Washington, D. C.,
May 6, 1952

107 UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA)
DISTRICT OF COLUMBIA)

ss:

I, HARRY M. HULL, Clerk of the United States District Court for the District of Columbia, do hereby certify the foregoing pages numbered 1 to 76, inclusive, to be the Reporter's Official Transcript as filed in the case of NEW WRINKLE, INC. ET AL, Plaintiffs, vs. JOHN A. MARZALL, COMMISSIONER OF PATENTS, Defendant, Civil Action No. 2964-49; and the foregoing pages numbered 77 to 106, inclusive, to be a true and correct transcript of the record, as the same remains upon file and of record in said Court, according to the Designation filed by counsel in said case, except the following:

The original exhibits, as designated, are not included in this transcript for the reason they are being transmitted in original form to the Court of Appeals pursuant to an order of this Court dated May 2, 1952.

IN TESTIMONY WHEREOF, I hereunto subscribe my name and affix the seal of said Court, at the City of Washington, in said District, this 18th day of June, 1952.

/s/ Harry M. Hull,
Clerk

[Seal]

1 Filed May 23 1952 Harry M. Hull, Clerk

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

NEW WRINKLE, INC., and
WILLIAM A. WALDIE,
Plaintiffs,

v.

JOHN A. MARZALL,
Commissioner of Patents,
Defendant.

Civil Action No. 2964-49

Washington, D. C.,
March 5, 1951.

The above-entitled matter came on for trial on the merits before Hon. EDWARD M. CURRAN, United States District Judge, at 10:00 o'clock a.m.

APPEARANCES:
MESSRS. TOULMIN & TOULMIN,
308 West First St., Dayton 2, Ohio, by
DUWARD C. STALEY, Esq.,
counsel for the plaintiffs.
JOHN M. MASON, Esq.,
Munsey Building, Washington, D. C.,
counsel for the plaintiffs.
JOSEPH SCHIMMEL, Esq.,
Assistant Solicitor, U. S. Patent Office,
on behalf of the Commissioner of Patents.

* * * *

3 *Proceedings*

THE CLERK: New Wrinkle, Inc., v. Marzall.

MR. MASON: May it please the Honorable Court, as counsel for the plaintiff, I wish to move the admission, for the purposes of this trial, of Mr. D. C. Staley of Dayton, Ohio. He is a member of the court of the Southern District of Ohio, also other courts, including the Supreme Court of the United States.

THE COURT: Very well.

MR. STALEY: If the Court please, I think it would be best at this time if I would offer in evidence the complete file wrapper, certified copy of the file wrapper, and history of the patent application that is in contest at this present time.

THE COURT: Very well.

(Thereupon, application file was marked Plainitffs' Exhibit No. 1 for identification, and was received in evidence.)

MR. STALEY: May it please the Court, this case, involving an application for United States letters patent, is brought here under Section 4915 of the Revised Statutes, after refusal of the Commissioner of Patents to issue a patent on the subject of the patent application.

The answer admits certain allegations contained in the Bill of Complaint, which Your Honor might like me
4 to list at this time to save time.

The answer admits the capacity of the plaintiffs and the residence of the parties, and also admits the capacity of the Commissioner of Patents, and that the suit is brought under the patent laws of the United States, in accordance with the provisions of Section 4915 of the Revised Statutes, Title 35, Section 63, U. S. C. A.

The answer also admits that the ownership of the application involved is in New Wrinkle, Inc., a corporation, by assignment, and that the application was duly filed and prosecuted in the United States Patent Office, including an appeal of the application to the Patent Office Board of Appeals.

The answer also admits that the Patent Office Board of Appeals refused to sustain the rejection of the Patent Office Examiner with reference to certain claims of the application, namely, 5, 6, 7 and 8, as being too broad in scope.

The answer also admits that the Patent Office Board

of Appeals refused to sustain the Patent Office Examiner in a rejection of aggregation of certain of the claims, such as Claims 5 to 11, inclusive, but that the Commissioner of Patents refused and still refuses to issue a patent, for the reason of the affirmance of the rejection of the Examiner that the invention defined by Claims 1
to 11, which are all of the claims in the case, is
5 not patentably distinct from certain prior art pat-
ents; and also, the affirmance of the rejection of the Examiner concerning Claims 1, 2, 3 and 4, which were rejected on the ground of aggregation.

There are only three prior art patents that are concerned in the rejection of the claims, and these are Waldie, 2,392,346, and two Root patents, 1,883,408 and 1,950,417.

The invention of the Waldie application relates to a wrinkle catalyst that is a powdered material, or composition, which, when it is added to a non-wrinkling oil or varnish base, converts that non-wrinkling oil or varnish base into a composition that has wrinkling properties.

The invention, therefore, particularly relates to coating compositions having wrinkling properties and ways of converting non-wrinkling coating compositions to one which will have wrinkling properties.

There is in the prior art disclosure of various kinds of compositions that possess wrinkling properties, and these compositions are processed in various ways, so that it is not our desire here to urge upon the Court that this case is a discovery of wrinkling properties in coating compositions.

It is the plaintiffs' position that it is new and novel to obtain a wrinkling coating composition from any non-wrinkling coating composition, merely by the introduction of a powdered material that is especially prepared, acting as a wrinkle catalyst for producing a wrinkle coating composition.

6 It is also the plaintiffs' position that the process
for converting a non-wrinkling coating composition

into a wrinkle coating composition by the addition of the powdered material is a new and novel process, as is the product itself of the powder material that promotes or converts the non-wrinkle coating composition to a wrinkling composition.

It is further the plaintiffs' position that the prior art, prior patent art, used by the Patent Office Examiner and by the Patent Office Board of Appeals, in rejecting the claims as set forth in the Bill of Complaint, is insufficient to anticipate the claims of this particular application.

It is also the plaintiffs' position that there is a chemical cooperation or combination of the materials that go into the making of the applicant's powdered wrinkle catalyst, such that there is no ground for rejection of the claims, any of the claims, on the basis of aggregation.

In chemistry, there is no such thing as pre-vision, and on this point, I would like to call Your Honor's attention to Corona Co. v. Dovan Corp., 276 U. S. 358 at 368-369, and United Chromium v. International Silver Co., 53 Fed. 2d 390 at page 393.

The Waldie application itself discloses the use of a powder material which, when added to non-wrinkling oils, produces a wrinkling composition. The dry powder material itself comprises what is termed in the application as an oil reactant and a texture modifier or drier. 7

The oil reactant is a chemical that is selected from the chemical group, consisting of maleic acid, maleic acid anhydride, and fumaric acid.

The texture producer, or the drier, is selected from the chemical group consisting of manganese borate, cobalt acetate, and lead oxides.

To obtain the modifying powder of the applicants' invention, one part of the texture producer or drier is intimately mixed with from one to four parts of the oil reactant, such as the maleic anhydride.

This powder product is the modifying agent itself, or wrinkle catalyst, that is added to a non-wrinkling oil or a non-wrinkling varnish composition, to convert it to a wrinkling composition.

In order to convert the non-wrinkling composition to a wrinkle coating composition by the use of the powdered material or wrinkling catalyst of the invention, the application discloses that the non-wrinkling oil and a resin is heated to a temperature of about 400 degrees Fahrenheit, until the resin is thoroughly dissolved and absorbed into the oil.

At this time, a certain proportion of the wrinkle catalyst or powdered material of the composition is added into this heated oil while it is still at about the temperature of 400 degrees Fahrenheit.

8 The resulting solution, or at that time possible dispersion, is then raised in temperature to a point of about 600 degrees Fahrenheit, at which time there is a chemical reaction that occurs over a period of about 30 minutes.

At the end of that time, the resulting composition is allowed to cool, whereupon certain thinners or solvents are added in order to reduce the consistency of the composition to that which is desirable for its use; and also, at this particular stage, if it is desired, other additional drying agents can be added into the composition to further enhance the wrinkling properties of the coating composition.

The claims that are here for consideration by Your Honor are divided into five classifications.

The first class is that which we call the dry modifying powder, and this includes Claims 1 to 4, inclusive.

The second group of claims are those that are directed to the oil composition, consisting of the oil, the non-wrinkling oil, and the wrinkle catalyst or powder of the invention. These are claims 5, 6 and 7.

Claim 8, which is the third group, is directed to the method of producing that composition consisting of the oil and the wrinkle catalyst.

The fourth group, I should say the fourth class of claims, is Claim 9. That is directed to a wrinkle varnish
composition, which would include the non-wrinkling
9 oil, a resin, and the powder of the material of
this invention added to it.

Claims 10 and 11 are the last class of claims, which are directed to the process of converting a non-wrinkling coating composition of a varnish base type to a wrinkle type of coating composition.

During the prosecution of the claims before the Patent Office, the Patent Office Examiner rejected Claims 5 to 8, inclusive, that were directed to the oil composition and method of making it, as being too broad in scope. However, this particular rejection has not been affirmed by the Patent Office Board of Appeals.

Also all of the claims were rejected by the Examiner in the Patent Office as being directed to an aggregation. However, in this regard the Patent Office Board of Appeals refused to sustain the Examiner in this rejection as to Claims 5 to 11, inclusive.

There is, therefore, before Your Honor today for consideration the two propositions of rejection that were sustained by the Patent Office Board of Appeals: namely, the rejection of Claims 1 to 11, inclusive, as not being patentable over the Waldie patent of record and the two Root patents of record; and that the rejection of Claims 1 to 4, on the ground of aggregation, had been proper.

As to this, it is the plaintiffs' position that the prior
art patents of Waldie and Root, taken either
10 singly or in combination, do not disclose sufficient
subject matter as to anticipate any of the claims
of the Waldie application.

Further, that Claims 1 to 4, that are directed to the dry texture modifying powder, set forth a product in which the component elements of that product have a definite cooperative effect.

We expect to show that there is an entirely different inventive concept in the use and the manner of use of a texture modifying powder as set forth in the Waldie application under consideration, even though the use of the same chemical elements is disclosed in some of the prior art patents.

We will urge that there is no disclosure in any prior art patent that is cited by the Patent Office from which any teaching could be obtained that would indicate to one skilled in the art that a dry modifying powder can be added to a non-wrinkling coating composition to convert it to a wrinkle coating composition.

We will also urge that the process of converting the non-wrinkle coating composition to one which produces a wrinkle is new and novel, and that there is a definite cooperation between the components of the texture modifying powder, whereby a wrinkle film is obtained that has different properties from those that are obtained by the prior art.

If Your Honor please, we have only one witness,
11 who is the inventor himself. To that extent, I
would not think that our prima facie case on testimony will take very long.

MR. SCHIMMEL: If the Court please, I think the statement of plaintiffs' counsel is essentially correct as to what the issue is before the Court this morning. However, I believe he has divided the claims into too great detail. I don't think we have to go into the detail into which he has gone in dividing the claims into oil composition group and varnish group, because as far as the materials defined in the claims are concerned, they don't differ; they are merely the designation of a non-wrinkling oil plus the modifier that is used to create a wrinkling composition, whether you define it, call it a vranish, or whether you call it an oil composition. The ingredients are the same.

I think, as he has indicated, it is the position of the Office that all the claims are unpatentable over Waldie's own patent, for the simple reason that that patent describes to the art the taking of the non-wrinkling oil, which is the same oil that is used here, linseed oil, and treating that oil with maleic anhydride, which is one of the materials that is defined in the composition here for producing a wrinkling effect.

The steps of converting the non-wrinkling oil to the wrinkling oil are essentially the same. In each case, in the patent and in the application, a resin is dispersed
12 in the oil while it is being heated to a temperature of about 400 Fahrenheit. Then a proportion of acid, maleic anhydride and maleic acid, is added, and the oil is heated to around 600 Fahrenheit. Then it is cooled down to about 400, solvents are added, driers are added, and the result is a wrinkling composition from a non-wrinkling oil.

The only difference between the patent and the application here is that in addition to using the acid, which the patent says converts the non-wrinkling oil to a wrinkling oil,—

THE COURT: He adds the dry powder.

MR. SCHIMMEL: —he adds a drier at the same time. That is what he calls his texture producer, adding a normal drier to a drying oil.

THE COURT: When does Waldie add the drier; afterwards?

MR. SCHIMMEL: Waldie adds a drier afterwards in the patent, and he also adds a drier afterwards in the application. But what he has in this case is the addition of a drier with the wrinkle producer.

Now, it is common in the art, and by definition, as the Board has pointed out, in the Century Dictionary, a raw drying oil is converted to a boiled drying oil by adding a dryer and heating.

All Waldie has done in this application is, while he is making the wrinkling composition, he is boiling his oil.

13 THE COURT: Waldie?

MR. SCHIMMEL: Waldie, in this application, by adding his texture producer or, as plaintiffs' counsel has indicated, the drier. That is a manganese borate or the lead oxide or the cobalt acetate, which he adds together with the acid to produce—

THE COURT: You say that is what Waldie does?

MR. SCHIMMEL: Well, Waldie, the applicant here, is the same Waldie who is the patentee being relied on. They are the same party, Your Honor.

THE COURT: Oh, you have given a patent to Waldie.

MR. SCHIMMEL: We have given Waldie a patent on converting a non-wrinkling oil to a wrinkling oil composition by adding maleic anhydride. We have given him a patent for that. The improvement—

THE COURT: Oh. now he comes along with what he claims is a little different and assigns it to the New Wrinkle, Inc.

MR. SCHIMMEL: The patent is assigned to the New Wrinkle also. The same parties in interest are involved.

THE COURT: Well, what is the difference between what he has already got and what he wants?

MR. STALEY: Could I answer your question, Your Honor?

THE COURT: Yes.

MR. STALEY: The previous Waldie patent discloses a certain way of producing a wrinkle coating 14 composition, by the use of a maleic anhydride, which is added into the non-wrinkling oil at one time. Then that material is heated, and then, after that heating occurs, he adds a drier after the heating.

THE COURT: What does he do in this new one? Does he add it at the same time?

MR. STALEY: Yes. He adds the maleic anhydride as an oil reactant and a drier as a texture modifier at the same time, prior to the raising of the temperature of the oil.

THE COURT: And he gets the same result?

MR. STALEY: No, Your Honor, he gets a different result. That is the point that is in question.

THE COURT: What is the result he gets in this new one that he did not get under the old one?

MR. STALEY: The result is that you obtain an improved quality of wrinkling oil.

THE COURT: An improvement is not an invention, is it?

MR. STALEY: You also obtain a product which gives you a harder film than in the prior Waldie patent. It is a definitely improved product over that of the prior patent.

THE COURT: I take it you are going to submit briefs, aren't you?

MR. STALEY: I was going to ask that privilege, Your Honor.

MR. SCHIMMEL: Yes, I think so.

15 THE COURT: I think it is going to be important. I did not realize till you called it to my attention that Waldie had, when he claimed his new invention, assigned it to the plaintiff, and that the Patent Office had already issued him an invention with reference to this wrinkling process. I think it is very important, because I am rather hesitant about saying that an improvement is an invention.

MR. STALEY: There is an improvement in the nature of obtaining a different result.

THE COURT: Well, you point all that out in whatever you want to submit to the Court.

MR. STALEY: Yes.

THE COURT: I did not mean to cut you off, Mr. Schimmel. Did you want to continue?

MR. SCHIMMEL: I just wanted to precisely, I think, point that out as the issue in this case, other than the separate issue with respect to Claims 1 to 4 on the question of aggregation.

In addition to their rejection on the Waldie patent, in view of the Root patents, they have been rejected as failing to define "invention", since all they are—or rather, all they defined is a mechanical mixture of two materials, which have no effect one upon the other, just the same as though they took your salt and your pepper out of
separate containers and put them in one container
16 and mixed them up and used them both at the
same time.

That is what he wants as far as Claims 1 to 4 are concerned, a patent on this mixture of materials, which have no effect on each other in that mixture. As we see it, that is not inventive subject matter.

THE COURT: Very well. When do you want to submit your brief?

MR. STALEY: At Your Honor's pleasure, if we could have ten days to two weeks to prepare our brief.

THE COURT: All right, suppose you file your brief in two weeks and send a copy to Mr. Schimmel. Do you want two weeks in which to reply?

MR. SCHIMMEL: About the same, if you don't mind.

THE COURT: All right.

MR. STALEY: Thank you, Your Honor.

Mr. Waldie, will you please take the stand?

Thereupon—

William Allshire Waldie,

one of the plaintiffs, was called as a witness and, having been first duly sworn, was examined and testified as follows:

Direct Examination

BY MR. STALEY:

Q Will you state your name, your residence, and your age, please? A William Allshire Waldie,
17 resident of Oakwood, suburb of Dayton, Ohio, age 64.

Q Do you hold any degrees from any schools, Mr. Waldie? A I do. I hold a Bachelor of Science degree from Harvard College.

Q What is your present occupation? A Technical Director of New Wrinkle, Inc., in charge of their research and development work and their varnish production.

Q How long have you been with New Wrinkle, Inc.? A I have been with New Wrinkle since 1939.

Q Have you had any experience in the field of paints and varnishes and coating compositions? A I have been engaged in the paint and varnish field since 1909.

Q Will you give us some of your background experience in various companies for which you have worked, the capacities you have held in those various positions? A The first position I had was as salesman for the Farrington Varnish Company of Boston, Massachusetts.

I then went to the Glidden Varnish Company, Cleveland, Ohio, as the assistant chemist. At the end of one year I was made Chief Chemist. I left them at the end of four years and became superintendent of Thibault & Walker Company, Long Island City, New York. I returned then to the Glidden Company as a research director in charge of laboratory and varnish develop-
18 ment.

In 1920, I left the Glidden Company, went over to the Ohio Varnish Company as Director of Research in charge of their varnish and laboratory, and developed their lacquer department. On the windup in receivership of that company, I went into general consulting practice and worked during 1930 to 1939 with Sherwin-Williams Company, Lilly Varnish Company, and as superintendent of the Indianapolis Paint & Varnish Company, with the J. C. Carlson Company in Chicago, and the Empire Varnish Company of Cleveland; and also the Egyptian Lacquer Company of New York City.

Q Have you ever written any articles or produced any books? A I have written several technical articles, published in the various technical magazines, and I am also the author of "The Science of Wrinkle Finishes".

Q Have you made any inventions that are the subject matter of patents? A I have received about 50 to 75 domestic and foreign patents on inventions in the field of wrinkle finishes, several in the field of crystallizing lacquers, and several in the field of pigment dispersions.

Q Have you ever had any direct experience with reading and understanding patents? A I pay particu-
19 lar attention to all new developments in the field
of these coating materials, with the purpose of keeping abreast of the times and knowing what the other companies are striving to do.

Q Have you ever been involved in any litigation involving patents? A I was engaged as Technical Consultant with the New Wrinkle, Inc., along about 1940, '42, in the infringement case of New Wrinkle v. Fritz, which was tried in the Buffalo Court.

Q Do you have any relationship to the Waldie that is the Waldie of the patent application involved herein? A I am the same person.

Q Have you read the Waldie application and the various references that are cited in that application? A I have considered both.

Q Do you think you understand them? A I understand them perfectly.

THE COURT: If he doesn't, I don't know who does.

MR. STALEY: Thank you, Your Honor.

BY MR. STALEY:

Q What is your understanding of the Waldie application? A The Waldie application is directed to the preparation of a powder which, added to a varnish and processed, heat processed, the usual methods, will produce a wrinkle texture.

THE COURT: That is the one that has already been granted to you?

20 THE WITNESS: What was that, Judge?

THE COURT: What happens in the patent that has already been granted to you; what is the process there?

THE WITNESS: The difference between the two is the fact that the maleic anhydride treatment of the oil by itself will not produce a wrinkle finish.

MR. SCHIMMEL: Whew!

THE WITNESS: What happens in the present situation is that by intimately mixing the cobalt acetate and maleic anhydride, there is an insitu formation,—

THE COURT: You mean in the patent of the application you filed prior to this one, and you received your patent?

THE WITNESS: Yes, sir.

THE COURT: You mean under that patent you could not get a wrinkling process?

THE WITNESS: Not without the addition of the final drier. The final drier is a necessary part of that.

THE COURT: Well, in both the patent that has been issued to you and in this application, the result is the same, is it not?

THE WITNESS: No.

THE COURT: You get a wrinkle effect.

THE WITNESS: No, I have a harder material.

THE COURT: Pardon me?

THE WITNESS: I have a harder material and
21 a quicker formation in the present appplication.

THE COURT: But you do get a wrinkling process in both, is that correct?

THE WITNESS: Oh, yes, you would have to get your wrinkle. That is the final object.

THE COURT: But you say you do it better in this new one than the one you—

THE WITNESS: Yes.

BY MR. STALEY:

Q Mr. Waidie, in the patent specification we find the term "oil reactant" used. Can you tell me what is meant by that? A The oil reactant applies to the maleic anhydride.

Q What is the purpose of the oil reactant? A The oil reactant modifies the oil by changing the bonds of the same oil.

Q Does that have anything to do with making the oil a wrinkling or a non-wrinkling oil? A No, it has not.

Q Also in the patent specification, we find the term "texture producer" used. Can you tell me what that is? A The texture producer is the cobalt drier.

Q What is the purpose of the texture modifier or
drier? A The texture modifier forms a surface
22 skin, and in the baking process the expansion of
the undercoat causes the wrinkling.

Q Will the texture producer or drier, by itself, in the oil, or the varnish base, produce a wrinkle finish? A The texture producer, no. It is not enough on there. You have to get it into the varnish. On the straight oil you will not get a true wrinkle finish.

Q Will the introduction of the oil reactant, which is the maleic anhydride, as I understand it, in the oil or the varnish base composition, alone, produce a wrinkle finish? A No.

THE COURT: What is it you do in this new one that you don't do in the old one?

THE WITNESS: What I have done actually, Your Honor, is to produce a new drying compound.

THE COURT: A new drying compound?

THE WITNESS: New drying compound.

THE COURT: What is that new drying compound?

THE WITNESS: Well, to express it, we will have to—the cobalt and the maleic acid will combine to form cobalt maleate insitu.

THE COURT: That is in the new one.

THE WITNESS: That is actually in the new one, yes.

THE COURT: What is in the old one?

THE WITNESS: The old one is straight maleic
23 anhydride, in which the drier is added as a liquid
drier and is not a cooked part of the composition.

BY MR. STALEY:

Q What kind of an oil do you use in the coating composition of the Waldie application? A A non-conjugated oil, linseed oil.

Q What do you mean by a non-conjugated oil? A A non-conjugated oil is where the double bonds of the radicals are not adjacent; that is, they spread out, and there are other CH compound groupings in between.

Q Can you tell me whether it is either a wrinkling or a non-wrinkling oil? A A non-wrinkling oil is an oil that has these bonds spread.

Q In your patent application, are you using a wrinkling or a non-wrinkling oil as the base? A The basis is the using of non-wrinkling oil.

Q Can non-wrinkling oils be made into wrinkling oils? A I have done it in the present application.

Q How, in general, can that occur? A By the alteration of the bonds so that they will be adjacent, and that causes, is conducive to the quick formation of the skin on the surface of the wrinkle finish.

Q From your experience, could you tell me whether
there is any chemical action that occurs in convert-
24 ing the non-wrinkling oil to a wrinkling oil in
your application? A Why, yes, there is a definite chemical reaction there, because you have shifted the bonds—if you have a carbon group here with two bonds

going off and you have a straight CH in between here and here, then it comes down with this carbon group here with the double bonds. When you convert, you simply pull this one down here to the bottom, making them adjacent. (Indicating).

Q Does that make a wrinkling oil? A That will make your wrinkling oil.

Q From your experience can you tell me whether the wrinkling oil that you have produced in your application will, in itself, produce a wrinkle finish? A Yes, it will produce a wrinkle finish.

Q Does the oil reactant and the texture modifier or drier, when used together in your application, have any effect on the final product that is obtained, when applied either to the oil or to the varnish base consisting of oil and resin? A It would make a harder drying varnish with just the oil, the reacted oil.

Q Is there any difference in the reaction that you would get if you add the modifying powder to an oil as distinguished from adding the modifying powder to a varnish base, consisting of oil and resin? A Naturally, with the addition of the varnish, you are going to have a harder film. Otherwise, the texture is going to be practically the same. I mean, the properties would be about the same. The oil is producing the texture and not the resin.

Q I might ask at this time, Mr. Waldie, what is meant by a wrinkle finish. A The wrinkle finish has been best described as the ripples in the sand produced by the ebb and flow of the tide.

THE COURT: Well, what is that in; do you mean that is used—

THE WITNESS: That is to give a—

THE COURT: Yes, but do you put it on the wall?

THE WITNESS: A wrinkle finish is generally baked, Your Honor.

THE COURT: Is generally what?

THE WITNESS: Is generally a baked proposition. There are some air-dry finishes, but it takes a long while for—

THE COURT: Well, what do you use it for?

(The witness indicated an object.)

THE COURT: What do you use the wrinkle finish for?

THE WITNESS: They are used on all business machines, typewriters, adding machines, and the likes of that. Here is a sample of it (indicating).

MR. STALEY: May I answer Your Honor's question?

A wrinkle finish is a coating composition like a
26 varnish or a paint.

THE COURT: That is what I was trying to get at.

MR. STALEY: It is a surface finishing finish.

THE COURT: What do you use it on a typewriter for?

MR .STALEY: As a surface finish.

THE COURT: Oh, I see what you mean.

MR. SCHIMMEL: It gives it a rough appearance.

THE COURT: You can use it on anything you want to give a rough appearance to.

MR. STALEY: That is right.

BY MR. STALEY:

Q Mr. Waldie, do you have any samples of wrinkle finish? A I have some. You will find them on the table there.

MR. STALEY: If Your Honor please, I will give the witness this material.

(Handing to witness.)

MR. STALEY: Just hand it to the Court, Mr. Waldie, please.

(Handed to Court.)

THE COURT: What is this material?

THE WITNESS: Those are put on paper for the purpose—

THE COURT: This is paper?

THE WITNESS: That is paper, yes. Sometimes it is easier to carry those types of samples around than metal.

THE COURT: Have you seen these, have you?

27 MR. SCHIMMEL: Yes.

MR. STALEY: Your Honor, I would like to introduce these in evidence.

THE COURT: Very well.

MR. STALEY: As samples of wrinkle finishes.

THE COURT: They may be received. Mark them Mr. Clerk, as Plaintiffs' exhibits.

(Thereupon, three samples of wrinkle finish were marked as Plaintiffs' Exhibits 2, 3 and 4 for identification, and were received in evidence.)

THE COURT: You could make wallpaper the same, couldn't you?

THE WITNESS: What was it?

THE COURT: You could make wallpaper the same, could you?

THE WITNESS: Oh, yes, yes.

BY MR. STALEY:

Q Does the material of your patent application produce a wrinkle finish which might be said to be similar to the plaintiffs' exhibits— A Produced exactly the same.

Q —just introduced in evidence? A Just the same.

THE COURT: Who made these?

THE WITNESS: Those are samples that I have made up for my own purpose around the laboratory.

28 THE COURT: From the process used in the patent you now have or the new one?

THE WITNESS: No, they are not from the process involved, at the present time. They are simply illustrative of wrinkle finishes.

THE COURT: Do you have anything that is a sample of the process you use in the present application?

THE WITNESS: No, we have not.

MR. STALEY: Unfortunately, we do not, Your Honor. Mr. Waldie was called in upon the case at the last moment. My original witness became ill.

THE COURT: How did you make these up? Is that the result of the process used in the application now granted to you?

THE WITNESS: No, they are not the result whatsoever of this process, application. I have taken in these samples an ordinary run, say, of a wrinkling varnish and ground pigment into it to produce the enamel, and sprayed those out on the paper to produce and show what a wrinkle finish actually is.

MR. SCHIMMEL: In other words, may I say that would be according to Root's patents.

THE WITNESS: Yes, well, along the basis of that, yes, yes.

MR. SCHIMMEL: In other words, that is the prior art.

MR. STALEY: These were introduced, Your Honor, solely for the purpose of indicating what we mean by "wrinkle finish."

29 THE COURT: Yes, I understand.

BY MR. STALEY:

Q Mr. Waldie, do you get any chemical reaction between the oil reactant such as maleic anhydride, and the texture modifier, such as cobalt acetate, directly? A In a process?

Q What I am referring to is chemical reaction between the elements themselves. A There is a chemical reaction between the two of them when they are outside; but that material is not usable in the patent application, for the fact that it is not soluble in the oil.

Q Do you have any samples of the dry powder mixture of the Waldie application. A I have (handing to counsel).

MR. STALEY: If Your Honor please, I would like to introduce in evidence a sample of the dry powder mixture of the texture modifying powder itself, which is the product of this invention.

THE COURT: You say this powder is the product of this invention, or is this powder the one that you use in the invention to produce the non-wrinkling process?

MR. STALEY: It is the powder of the invention and the powder used in the invention. We have claims both on the powder itself and the coating composition and the method of making the coating composition.

THE COURT: This is an invention, this powder?

MR. STALEY: Your Honor, we believe it to be so, yes.

THE COURT: What is it; what is it made up of?

MR. STALEY: This particular powder you have here is made of maleic anhydride and cobalt acetate.

THE COURT: Put together like the salt and pepper that Mr. Schimmel mentioned a few minutes ago?

MR. STALEY: Not just like the salt and pepper Mr. Schimmel mentioned, no.

THE COURT: Well, it is a combination of two different powders; is that a—

MR. STALEY: No, it is not a combination of two different powders, Your Honor.

THE COURT: What is it?

MR. STALEY: Maleic anhydride is a flaked material. That flaked material is broken down by a grinding process into a powder. The cobalt acetate, which has been added into the powder, is ground intimately with the maleic anhydride, so that the resulting grinding of the materials forms this powder.

THE COURT: And that is what you claim is an invention?

MR. STALEY: Yes, Your Honor, because of the fact that we do not feel that it is an aggregation of elements as set forth—

THE COURT: What is it? What else is it?

31 MR. STALEY: We have a cooperation of the elements here, Your Honor, which is not present in their normal condition as you would find them in normal usage.

THE COURT: Well, no, you grind them down and put them together; but isn't that an aggregate of the sugstances?

MR. STALEY: We feel it is not, because when you place the two together, you get a different action than when they are used in their normal condition.

THE COURT: Well, that happens to everything you put together, doesn't it?

MR. STALEY: Not normally, Your Honor.

THE COURT: I admit that if you put salt and pepper together and sprinkle them on your food, if you used the same amount of salt and pepper separately, it would probably have the same effect.

MR. STALEY: But taking the salt and pepper item as an example, if you used the salt, you would get the salt effect by itself; the pepper has no reaction on the salt. The same is true in the reverse condition.

THE COURT: I know, when you use the salt and pepper, but if you used other substances, you would get the same result as you are getting here, wouldn't you? It all depends on what you mix together, isn't that right?

MR. STALEY: Well, I don't know just how Your Honor means that last question.

32 THE COURT: Well, you don't contend that what you mix, that these two powders are the only two elements that, when mixed together, produce another effect, do you?

MR. STALEY: Oh, no, there are other elements that you can mix together which produce an effect which is different from each individual element.

THE COURT: I doubt that that is an invention, although I won't rule on it this morning.

MR. STALEY: If it please Your Honor, I would like to have the Clerk mark that particular exhibit as Plaintiffs' Exhibit 5.

THE COURT: Very well.

MR. STALEY: And introduce it in evidence.

THE COURT: Very well.

MR. STALEY: I don't know whether I did it before or not.

THE COURT: All right.

(Thereupon, tube of chemical powder marked 10506 was marked as Plaintiffs' Exhibit No. 5 for identification, and was received in evidence.)

BY MR. STALEY:

Q Mr. Waldie, what is the result of using a powder composition, Plaintiffs' Exhibit 5, in a non-wrinkling oil? A I didn't hear you.

Q What is the result of the use of the powder composition of Plaintiffs' Exhibit 5 in a non-wrinkling
33 oil? A When the powder is heated with the oil,
I believe that there is an interaction of the two materials under heat to form a cobalt maleate, and that compound proceeds further to break down into the oil all of the double bonds and produce the drying strength.

Q In your Waldie patent can you get the same result by the addition of the maleic anhydride, as disclosed in the Waldie application, and then subsequently adding the drier after you have heated it? A The varnish produced by the present application will dry harder than the one in the past patent.

Q Will you get the same chemical reaction in the Waldie patent that you do in the Waldie application?

A You will not, for the simple reason that the addition of the cobalt Nuodex is not a part, is not chemically combined with the oil. In other words, it acts simply as an oxygen carrier from the air to the varnish, causing the wrinkle formation.

Q Have you made any tests to demonstrate the principles that you have just enunciated here, concerning the reaction of the oil insitu, I mean the powder insitu, in the oil? A Here's some material in which I heated the maleic acid and the maleic anhydride and cobalt together and proceeded then to react them with the oil.

Q Mr. Waldie, just a moment, please.

34 MR. STALEY: I will ask the Court if I may introduce the sample that the witness has just given me, which is a reaction product of the maleic anhydride and cobalt acetate.

THE COURT: Very well.

MR. STALEY: I ask that it be marked as Plaintiffs' Exhibit 6.

MR. SCHIMMEL: This is the mixture?

MR. STALEY: Yes.

MR. SCHIMMEL: This would be the reaction product of these two?

MR. STALEY: This would be the reaction product of these two.

(Tube of chemical powder marked 10507 was marked as Plaintiffs' Exhibit No. 6 for identification, and was received in evidence.)

BY MR. STALEY:

Q Mr. Waldie, before we go any further, I hand you Plaintiffs' Exhibit 5 and Plaintiffs' Exhibit 6 and ask whether they are the identical materials? A The 506 is the dry mixture—

Q Would you please refer to the plaintiffs' exhibit number rather than the numbers which are on the bottles? A The Plaintiffs' Exhibit No. 5 is the dry mixture, as

is added in the processing of the varnish. The Plaintiffs'
Exhibit 6 is the Plaintiffs' Exhibit 5 in the same
35 proportion, reacted outside of the kettle; in other
words, to make a fusion process of it.

Q How do you get that fusion product? A The fusion process was by taking the same proportions of powder and heating up to 400 degrees Fahrenheit.

Q Referring to Plaintiffs' Exhibit 6, can that powder, which is the reaction product that you have just identified, be used in an oil to get the result that you desire in this application? A That will not have the same strength as Plaintiffs' Exhibit 5, due to the fact that there is considerable insoluble matter found at the bottom of the kettle, showing that the whole amount has not combined with the oil. This is evidenced by the residue I have selected from a—(unwrapping object)—it sticks better than you want, sometimes.

MR. STALEY: If Your Honor please, I would like to introduce in evidence a sample of a residue that Mr. Waldie has just referred to, and have the Clerk mark it as Plaintiffs' Exhibit 7.

THE COURT: Well, 7 is the residue from what?

THE WITNESS: From the darker there, No. 6, I think, on a fusion process (indicating).

(Thereupon, tube of residue was marked as Plaintiffs' Exhibit No. 7 for identification, and was received in evidence.)

36 BY MR. STALEY:

Q Mr. Waldie, do you have any samples of oil that you have prepared, using the products of Plaintiffs' Exhibits 5 and 6? A This is it (indicating).

Q I ask for the products of them in the oils, the oils in which you use the Plaintiffs' Exhibits 5 and 6. A (Objects handed by witness.)

MR. STALEY: If Your Honor please, I would like to introduce in evidence at this time two samples that have been handed me by the witness, one of which bears the number 10508, and the other of which bears the number 10509. I would like these to be introduced in evidence and to have the Clerk mark them as Plaintiffs' Exhibits 8 and 9.

(Thereupon, two tubes of oil marked respectively 10508 and 10509, were marked as Plaintiffs' Exhibits Nos. 8 and 9, respectively, and were received in evidence.)

BY MR. STALEY:

Q Mr. Waldie, I hand you what has just been marked as Plaintiffs' Exhibit 8, and will ask you if you can tell me what that particular product is. A Plaintiffs' Exhibit 8 is the product obtained by heating the linseed oil to 400 degrees, adding a proportion of Plaintiffs' Exhibit 5, and heating to 600 degrees Fahrenheit.

Q Will you tell me what Plaintiffs' Exhibit 9
37 is? A Plaintiffs' Exhibit 9 is the linseed oil
heated, mixed with Plaintiffs' Exhibit No. 6, on the same process.

Q Mr. Waldie, is there any difference in the oils as a result of the processing of those oils separately with Plaintiffs' Exhibits 5 and 6? A No. 8 has a higher viscosity than No. 9, which proves that the reaction has been stronger. That is shown by the rise in the bubble of the tube. These are standard viscosity tubes.

Q Can you tell me whether that viscosity is any different from that which you would find in a normal linseed oil? A There is a residue shown in the bottom of the vial of the last batch, of that last exhibit.

Q What are you referring to as the last exhibit, Mr. Waldie? A Plaintiffs' Exhibit No. 9. Yes.

Q You say Plaintiffs' Exhibit 9 is the one in which you have added the fusion product of Plaintiffs' Exhibit 6? A Correct.

Q And there is a residue in that oil? A Yes.

Q Now, returning to my original question, Mr. Waldie, is there any difference in the viscosity of the oils, of

Plaintiffs' Exhibits 8 and 9, from that which you would find in the normal raw linseed oil? A There is.

38 Q Do you have any samples of linseed oil at this time? A (Object handed by witness to counsel.)

MR. STALEY: The witness has just handed me—

THE WITNESS: That is the same linseed oil that is used.

MR. STALEY: Just a moment, Mr. Waldie.

The witness has handed me a bottle with the number 10510 on it. I would ask that this be introduced in evidence as Plaintiffs' Exhibit 10.

THE COURT: That is just pure linseed oil?

MR. STALEY: No, Your Honor; I will have the witness explain this in just a moment.

(Thereupon, tube of linseed oil marked 10510 was marked Plaintiffs' Exhibit No. 10 and received in evidence.)

BY MR. STALEY:

Q Mr. Waldie, what is Plaintiffs' Exhibit 10 that you have just given to me? A Plaintiffs' Exhibit 10 is linseed oil as used in the process which has simply been heated to 600 degrees and held there for 30 minutes.

Q Is the viscosity— A They are the same procedure as used in the sample with the oil, plus the dry mixture.

Q Is there any difference in viscosity in the oil of Plaintiffs' Exhibit 10 from that— A The oil is lighter.

Q —of Plaintiffs' Exhibits 8 and 9? A Lower
39 viscosity.

Q Can you tell me, is the viscosity in Plaintiffs' Exhibit 10, which has been heated to 600 degrees, any different from the viscosity of raw linsed oil? A There is a slight difference, not very much.

MR. STALEY: If the Court please, I would like to introduce the sample that the witness has just given me here.

THE COURT: What is that?

MR. STALEY: The raw linseed oil.

THE COURT: We don't need that, do we?

MR. STALEY: It is a matter of comparison of viscosities from raw linseed oil through a mere process of heating, then applying the two different products.

THE COURT: But in the prior art they heat the linsed oil, don't they?

MR. STALEY: Yes, they do heat the oil in the prior art, Your Honor.

THE COURT: Then why do we need the raw linseed oil here?

MR. STALEY: It is merely a matter of comparison of viscosities.

THE COURT: I don't necessary object to it. I don't see that it adds anything to this, in view of the fact that you have introduced the one that has been heated to 600 degrees Fahrenheit. However, if you wish to introduce it, I will admit it.

MR. STALEY: All right, sir.

Mark that as Plaintiffs' Exhibit 11, if you please.

(Thereupon, tube of clear linseed oil was marked as Plaintiffs' Exhibit No. 11 for identification, and was received in evidence.)

BY MR. STALEY:

Q Mr. Waldie, may I ask you, who made all these samples that we have been discussing, the various plaintiffs' exhibits? A I made all these exhibits myself.

Q From your experience, Mr. Waldie, and from the samples that you have made, can you say whether or not there is any difference in products that are made wherein the oil receives a mixture of the powdered material according to your application and one which receives the powdered mixture which is the heat-reactant product such as Plaintiffs' Exhibit 6? A The drying strength of the one made with the dry mixture, with Exhibit No. 5, will dry considerably faster, give a better texture, than Plaintiffs' Exhibit 6. In fact, Plaintiffs' Exhibit 6 will tend not to produce any texture whatsoever.

Q Can you say from your experience whether the residue such as Plaintiffs' Exhibit 7 in the oil would have any effect on the wrinkle finish produced if you used such an oil with that residue in it? A That would cause a decrease in the drying strength, because it is not
41 combined with the materials in there. Otherwise you have lost so much power.

Q Do you have a copy of the Waldie patent? A Yes (producing document).

Q No, a copy of the Waldie patent. A No, I have not.

Q Will you please get your copy of the patent, please, as well as the prior art? A (Witness obtaining documents.)

Q I understand you have read the Waldie patent 2,392,346. A I have.

Q And that that is your patent. A That is.

Q Will you tell me what that Waldie patent discloses? A (Inspecting document.)

Q I should say, will you tell the Court what that Waldie patent discloses? A That is a two-step process, in which the maleic anhydride is caused to react with a varnish base consisting of Amberol F7 and varnish linseed oil. The maleic anhydride tends to induce the conjugation in the varnish linseed oil, making it acceptable to the Nuodex cobalt, which causes the wrinkling power.

MR. STALEY: I might say, if Your Honor
42 please, I have some extra copies of those patents, if you would like to have marked copies, as well as copies of the claims, if you think it might be necessary to help you.

THE COURT: I have the 2,392,346.

MR. STALEY: All right, Your Honor.

BY MR. STALEY:

Q Mr. Waldie, referring to Example II in your patent, what is the Amberol F7? A Amberol F7 is the combination, chemical combination of rosin, glycerine, carbolic acid or phenol, and formaldahide.

Q Is that what might be termed a resin for varnish base? A Yes.

Q What is the maleic anhydride? A Maleic anhydride is the acidic composition in which the water of the maleic acid is driven off, causing it to become maleic anhydride.

Q Does that have any similarity to the maleic anhydride that is termed an oil reactant in your Waldie application? A The same material.

Q Pardon? A It is the same material.

Q What is the varnish linseed oil referred to in Example II of your patent? A Varnish linseed oil is linseed oil in which the phosphatides of linseed oil 43 have been removed by an acid or alkaline process.

Q Is that varnish linseed oil a wrinkling oil? A No.

Q Is it a non-wrinkling oil? A It is a non-wrinkling oil.

Q What are the mineral spirits referred to in Example II? A Mineral spirits is a petroleum derivative, a fractionation, which approximates the evaporation of turpentine. In other words, it is generally called turpentine substitute.

Q Is that what a lot of us commonly call a solvent? A That is a solvent.

Q What is Solvesso #2? A Solvesso #2 is a hydrogenated petroleum naphtha.

Q Is that what is also commonly known as a solvent? A That is also called a solvent.

Q What is Nuodex cobalt 6%? A Nuodex cobalt is a cobalt naphthenate in which the metallic compound is 6 percent actual cobalt metal.

Q Has that any relationship to a drier? A It is a drier.

Q Does the product of your Waldie patent produce a wrinkle finish? A Oh, yes, with the addition of
44 the cobalt there it does.

Q How do you obtain the composition of your Waldie patent? A By heating the resin and oil to a temperature of 400 degrees, thereupon adding the maleic acid, increasing the temperature to 550 degrees and holding at that temperature until the proper viscosity is obtained. Thereupon, it is reduced to about 400 degrees, and the solvent and the drier added.

Q Specifically, when is the maleic anhydride or, as we refer to it, the oil reactant, added to your composition in your Waldie patent? A At approximately 400 degrees.

Q And then, as I understand, the resulting mixture is heated? A Then the heat is increased.

Q When is the drier added? A The drier is added after the thinner, after the thinner is added, the temperature then of the mixture being below around, usually, 200 degrees. In other words, the last step in the process.

Q In your Waldie patent, from your experience, can you say whether the maleic anhydride addition to the composition, alone, will produce a wrinkle finish composition? A Not without the drier.

Q What is the effect of the drier in your prior
45 patent? A The drier serves to promote the surface skin formation, and on the expansion and contraction of the soft underportion of that film, causes the wrinkle.

Q From your experience, can you say whether or not there is any chemical reaction between the drier, such as

Nuodex cobalt, and the maleic anhydride? A There is no chemical reaction between those two.

Q Why do you say that? A The maleic anhydride acts directly on the linseed oil. It requires heat to react the maleic anhydride with the oil, whereas there is no processing involved whatsoever with the addition of the cobalt Nuodex. It simply acts as an oxygen transfer agent to the coating composition.

Q Then, specifically, how does the chemical action of the oil reactant and the drier of your Waldie patent differ from the reaction of the oil reactant drier in your patent application? A All of the materials in the patent application are definitely chemically combined with the oil or the varnish base. There is in the processing an insitu formation of cobalt maleate which reacts to the oil.

Q Can you say from your experience whether you get any different result in the coating composition, film, that is produced? A The coating composition of the 46 application will give a harder film than the prior patent.

Q Can you say whether or not you find any disclosure in your prior Waldie patent that would teach the addition of an oil reactant and the drier to the coating composition at the same time? A I do not.

Q Is there any disclosure or teaching that you can find in that patent that would give anyone skilled in the art reason to believe that an addition of the oil reactant and the drier together would give any beneficial effect? A No.

Q Is there any teaching whatever in that prior Waldie patent that you can add the oil reactant and the drier together during the up-heating or increased temperature of the oil, say, from 400 to 600 degrees? A There is none.

Q Mr. Waldie, you have a copy of the Root patent there, Root Patent 1,950,417? A I have.

Q I understand you have read the Root patent. A I have.

Q And you understand what is in it? A I have read it.

Q Can you tell me, Mr. Waldie, what is disclosed in that Root Patent 1,950,417? A It discloses the
47 manufacture of wrinkle finish for flexible articles,
in which all these examples call for the use of blown oils.

Q What is a blown oil? A A blown oil is an oil which has been heated to 300 to 400 degrees and air allowed to pass through it, until the proper viscosity is obtained.

Q What is the purpose of that? A To increase oxidation process.

Q Does that have any effect on whether it is a wrinkling or a non-wrinkling oil? A That increases the wrinkling power of the oil.

Q Does the Root patent disclose a coating composition that produces a wrinkle finish? A Yes.

Q How does Root produce his coating composition to give that wrinkle finish? A He produces it mainly by the use of blown wood oil, or blown oils.

Q How does he process his materials together to get his composition? A He melts the resin first, adds the oils, and then adds driers to it. It is processed until same are taken up, at which time the batch is removed to cool down, and the thinner is added.

48 Q I refer you to page 4, column 1 of the Root
patent. Near the bottom of the page, about line 70, there is a reference to manganese borate. What is that material? A Manganese borate is a drying compound.

Q When is that material added to the composition of the Root patent? A He is adding that at a temperature or 520 degrees.

Q Is that before the maximum heating of the oil, during its processing? A That is on its final point. It does not require practically any heat after that addition.

Q In the Root patent 1,950,417,—and I think for convenience from here on I will just refer to the last three numbers, "417", because of the two Root patents—do you find, is there any composition disclosed in that patent for use in the coating composition that is comparable or the same chemical composition as the maleic anhydride of the Waldie application or the Waldie patent? A There is no material applicable or of the same class, chemical compound.

Q What effect, if any, does the manganese borate have in the Root composition? A They are drying compounds entirely.

Q Is there any reason for Root to disclose an oil
reactant in his patent? A He does not mention
49 any oil reactant.

Q Why does Root not need an oil reactant in his patent? A For the simple reason that he is—

Q Pardon me just a minute, Mr. Waldie—as you require in your application. A Well, Root's patents are based, patent is based almost entirely on the use of blown oils.

Q Which is a wrinkling oil? A Which is a wrinkling oil. He mentions that definitely in his preface, on page 2, where he classifies oils and speaks of the advantages of using blown oils.

Q And your patent application is based on the use of non-wrinkling oils? A My patent is based on raw, non-wrinkling oils.

Q Is there a disclosure anywhere in the Root patent of the use of non-wrinkling oils exclusively in the coating composition? A No, there is no reference whatsoever, although he does mention the raw linseed oil. However, he goes further and he states that that is used simply as a modifier, not as a wrinkling material.

Q What effect would the use of any of the non-wrinkling oils referred to in Root have on the result, on the
composition? A The main thing that would show
50 up is that the ribs or elevations or the wrinkle
would tend to be farther spaced apart. In other
words, it is a diluent and a spreader of the texture.

Q Mr. Waldie, I refer you to page 2, column 1 of the patent, the Root Patent 417, lines about 13 to 18, and ask whether that terminology there would teach you the exclusive use of non-wrinkling oils in a coating composition to obtain a wrinkle finish. A It brings out the fact there of the value of blown oxidized oils.

Q And blown oil is a wrinkling oil? A Blown oil is a wrinkling oil.

Q Mr. Waldie, I also direct your attention to page 3, column 1, of the Root Patent 417, about lines 51 and 52, referring to driers such as cobalt acetate, red lead, manganese borate, lead lineolate, and ask you whether those driers could be used for the Nuodex cobalt 6 percent of your Waldie Patent 346? A They could be used.

Q From your experience, can you tell me whether the use of the driers referred to in the Root Patent 417 for the use of the drier in your patent 346 would cause any different result in a coating composition produced according to your patent 346? A The ultimate result would
be identical, in that there would be proudced a
51 wrinkle finish. However, that is restricted entirely
to the use of a non-wrinkling oil process, whereas
the Root does not mention any wrinkle finish produced
from straight raw linseed oil.

Q But can you use the driers referred to in Root in place of the Nuodex cobalt of your Waldie patent? A You could use those driers.

Q If you would use those driers of Root in your Waldie patent in place of the Nuodex cobalt, would you get any chemical action or reaction with the maleic anhydride that is used in your Waldie patent? A You would not get any reaction at the temperature involved there with the maleic anhydride. In other words, you are adding them as a separate ingredient, you are not getting any insitu formation whatsoever.

Q Mr. Waldie, you have a copy of the Root patent 1,883,408? A Yes.

Q And that, I understand, you have read and— A I have, yes.

Q —you understand the patent. Would you please tell the Court what the Root Patent 408 discloses? A It discloses a mixture of blown wood oil and raw China wood oil.

52 Q Are these oils that you just referred to wrinkling or non-wrinkling oils? A All of the oils in his examples are wrinkling oils.

Q Is there any disclosure whatever in that Root Patent 408 of an exclusive use of non-wrinkling oil in a coating composition? A None shown in his examples.

Q Is there anything disclosed in the Root Patent 408 that compares with the maleic anhydride or oil reactant of your patent application? A There is nothing shown in this application, in this patent.

Q In the Root Patent 408, I would call your attention to page 3, column 1, lines about 61 and 62—60 to 62, it is, wherein Root refers to such driers as cobalt acetate, red lead, manganese borate, lead lineolate, and ask whether these driers could be used for the Nuodex cobalt of your Waldie Patent 346. A They could.

Q If you would so use the driers of the Root Patent 408 in your Waldie Patent 346, would you get any chemical action or reaction with the maleic anhydride or oil reactant of your patent? A I would get a reaction.

THE COURT: What would happen?

53 BY MR. STALEY:

Q You say you would get a reaction? A Now, wait. You say your cobalt acetate, red lead, manganese borate, and lead lineolate for the Nuodex cobalt of—

Q Of your Waldie patent. A You would not get a definite reaction there, due to the insolubility of the formed compound.

THE COURT: What would you get; what would happen?

THE WITNESS: What was that?

THE COURT: What will you get?

THE WITNESS: You would get a maleate compound that is shown as insoluble in the oils, as we have got it here.

BY MR. STALEY:

Q Are you referring to Plaintiffs' Exhibit 9? A Plaintiffs' Exhibit 8 shows what you get with an intimate mixture of the driers plus the maleic anhydride, which forms the maleate insitu. Plaintiffs' Exhibit 9 shows what you get on a fusion process, which would be the same result as you would get by adding these other materials separately and not getting the compounding.

Q From your experience, Mr. Waldie, can you say whether or not there is any cooperation between the oil reactant, such as the maleic anhydride, and the texture modifier or the drier, of the modifying powder of the
Waldie application? A I believe there is a defi-
54 nite reaction existing there, under the heat process,
which is carried on while it is in the oil. I can base that on the amount of fuming that comes off the kettle in the processing.

Q How does that fuming affect your reaction to that? A The fuming reaction is due entirely to the volatility of the maleic acid, which is a very active material. What has happened in the mixture is, I have actually coated the maleic anhydride with the cobalt, and that protective coating interacts under the heat that is involved with the processing of the oil or varnish.

Q What do you understand by a boiled oil? A Boiled oil is more or less of a misnomer today. In the old times, the boiled oil meant an oil that was heated up to, say, 300 or 400 degrees, and then a drier such as litharge or red lead, added, and then cooked until those driers entered into part of the oil.

Today, there is no such thing as the true boiled oil, but it is technically known today as a bunghole boiled oil, to the extent that the bung is simply taken out of the barrel of oil and liquid drier, such as the Nuodex cobalt or manganese, poured in.

Q Is a boiled oil one which has wrinkling porperties? A Boiled oil has no wrinkling properties.

MR. SCHIMMEL: I didn't hear that.

THE WITNESS: Boiled oil has no wrinkling properties.

55 MR. STALEY: If Your Honor will give me just a moment, I think I am finished with my witness. (Inspecting documents.)

I think that will be all, Your Honor.

Cross Examination

BY MR. SCHIMMEL:

Q Mr. Waldie, during your testimony, you repeatedly used the expression, I believe, that your invention here is based on the use of raw non-wrinkling oil. Is that what you consider your invention in this case to be? A Would you repeat, please?

Q I believe you used the expression repeatedly, "raw non-wrinkling oil." A That is correct.

Q Is that what you consider your invention in this particular application to be, the use of a raw non-wrinkling oil? A This whole development is the result of research work to get away from the use of imported oil such as tung oil, which as you know became, always becomes, scarce in times of war.

What we were after is a mixture that could be added in the processing of the varnish to available oil, and we picked linseed oil. When we cooked that, we produced, we changed the conjugation of that oil to such an extent that it worked equally as well as the previous tung oil we were using.

56 Q Is the linseed oil that is used in making your non-wrinkling composition a raw oil? A I would have to call this a raw varnish oil. When you are talking of raw oil on the linseed side, that may be the ordinary pressed oil from the linseed case. That contains what I have identified as phosphatides.

If you take a raw linseed oil and heat it up by itself to a temperature of 350 or 400 degrees, these phosphatides will precipitate out, and that is commonly called a break in the oil.

Now, the linseed oil manufacturers remove that by either a heat treatment or by the addition of a small amount of a chemical agent, such as caustic soda or sulphuric acid. That produces what sometimes is called raw varnish oil.

Q Is that the varnish oil you were using in the examples of your patent also? A That is correct.

Q So, insofar as the base oil is concerned, your patent and the present application are using the same material? A Yes, correct.

Q You testified, I believe, that you could not get a wrinkle finish from the composition of your patent without the use of the driers; is that correct? A Without the use of the—no; without the use of the composition, the mixture.

57 Q No, I am talking about your patent now. A Oh, in the patent.

Q In your patent. A No, we will not get a wrinkle without that, right.

Q It will not wrinkle at all? A It will not wrinkle. When I say a wrinkle, I mean a uniform texture.

Q But it will not produce a wrinkle composition without the use of the driers? A No, it will not.

Q You would say it would not? A That would not.

Q In your patent, could you use a boiled oil in making the composition of that patent? A A boiled oil would have no value whatsoever. It is a non-wrinkling oil.

Q That is what you said you used in your patent, didn't you? A You are talking of boiled oil?

Q Yes. And you also said in your patent, didn't you, that you could use a non-wrinkling oil in your patent? A Yes.

Q Now, a boiled oil, linseed oil, is a non-wrinkling oil, isn't it? A It is.

58 Q Would you say you could use a boiled linseed oil in making the composition of your patent? A No.

Q Why? A Because it is not a wrinkling oil.

THE COURT: Well, did you ever use a wrinkling oil in your patent?

THE WITNESS: That depends on the method of processing, entirely.

BY MR. SCHIMMEL:

Q Under the patent that was granted to you,— A You are referring entirely to that maleic-treated patent?

Q Certainly. A That is the one you have in mind?

Q That is what the patent was on. A I have had so many, I get confused.

Q In that patent, don't you use a non-wrinkling oil? A That is correct.

Q And couldn't that non-wrinkling oil be a boiled linseed oil, under what you have disclosed in your patent? A Well, a boiled linseed oil would already have drier in it. You are going to work in all of that patent directly, because here you are adding driers directly from that boiled linseed oil.

59 Q But isn't a boiled linseed oil a non-wrinkling oil? A Boiled linseed oil is a non-wrinkling oil, yes.

Q And didn't you say— A But here, now, wait.

Q O.K. A Here you are going and you are going to tie in, you are going to make an entirely different proposition than is embodied in that, because you have got drier in your oil to start with.

Q It is a non-wrinkling oil, though, isn't it? A It is a non-wrinkling oil. Then, you are going to work and you are going to put maleic on top of that.

Q Wouldn't that amount— A That is another invention right away.

Q Isn't that the invention of your patent? A The invention of the patent is the action of the maleic acid on the varnish oil and the drier added after.

Q Would you mind looking at the patent? A (Inspecting document.)

Q On page 2 of the patent, column 2, beginning at line 14, where you state positively:

"It will be noted by those skilled in the art that the major significance of this invention resides in the use of unblown oils of a type (linseed type) which the skill and teachings of the art have always considered impossible to use in the preparation of wrinkle varnishes. For example, no one acquainted with and skilled in the art of manufacturing wrinkle coating compositions would have considered the use of unblown linseed oil exclusively in the manufacture of such compositions . . ."

Isn't that a holding out to the art that you can use any linseed oil other than an unblown oil? A You are getting over to pretty technical terms right on here, for the simple reason that—

Q You are the doctor. A Well, when we speak of "linseed type," we do not mean a prepared oil to which any addition has been made. We simply mean a refined oil in which—

THE COURT: You didn't say that in here, did you?

A —the break has been removed. You are adding, your supposition is, you have got a prepared oil, you haven't even got a blown oil in there.

BY MR. SCHIMMEL:

Q Didn't you say in that patent that you used anything but a blown oil? Isn't that what that means? A It says distinctly, "use of unblown oils" of the linseed oil type.

Q That means— A That does not say unblown
61 oils of the linseed type to which drier has been
added.

Q But isn't a boiled oil an unblown oil? A Certainly, certainly it is unblown oil. But you are going back to what is a blown oil, or what is a boiled oil.

Q A boiled oil, according to your own definition previously, was an oil that had been heated with a drier. A Or the bunghole type.

Q Yes. A Yes.

Q But according to the original definition of a boiled oil, it was one which had been heated with a manganese or cobalt drier, isn't it? A That is correct, yes.

Q Now, if we were to take an unblown oil and use a blown oil in your patented composition, to which we add maleic anhydride, would we get a wrinkle composition? A You would never get it out of the kettle. The maleic anhydride would polymerize that blown oil to a solid, rubbery mass.

Q Under the conditions that you describe in your patent, would that be true? A What was that?

Q Under the conditions that you describe in your
patent, would that be true? A Yes, it would, if
62 you used the type of oil that you mean, blown oil.
Now, I also call attention to the fact on all the Root patents, when you are talking of using a blown oil, he states that blown oil should not be added above the temperature of 510 degrees Fahrenheit, because the oil will flash, cause a fire.

Q Do I understand you to mean now that you cannot use a blown oil in your patent and get the result? A I would not attemp to use it, because it would solidify where—

Q Would it be impossible to use it? A It would be impossible to use it.

MR. SCHIMMEL: May I call Your Honor's attention to Claim 5, in view of the testimony just given?

THE COURT: Claim 5 of what, the application?

MR. SCHIMMEL: Of the present application. Note that the composition is defined as one comprising a non-conjugated double bonded oil.

BY MR. SCHIMMEL:

Q Can you use a boiled oil in your present application? A Can I what?

Q Use a boiled oil. A A boiled oil? That has got drier in it.

Q Can you use it? A You are altering the
63 composition right then and there.

Q Can you use it in this composition? A (No response.)

Q I haven't heard any answer yet.

THE COURT: Answer the question. Can you use it in the present application, a boiled oil? A I'd say no.

MR. SCHIMMEL: May I point out to Your Honor that the claim is obviously too broad and unpatentable for that reason, too, in view of the evidence that a boiled oil cannot be used. A non-conjugated double bonded oil reads on a boiled oil. If the invention here is limited to a raw varnish oil, there isn't a single claim that says anything about raw varnish oil.

BY MR. SCHIMMEL:

Q You have testified, Mr. Waldie, that in using the mixed powder of maleic anhydride and drier in this case, when that mixture is added to the varnish oil in preparing your wrinkling composition, there is a reaction between the maleic anhydride and the cobalt drier; is that correct? A That is correct.

Q Does your patent application say so? A I do not believe it made that definite a claim.

Q You do not believe, then— A I don't believe—
64 Q —that that is disclosed in your application;
is that correct? A I do not believe it made that
definite a claim.

Q Have we any evidence here to prove that there is such a reaction when it is added to the oil? A Yes, our exhibits that show there is a definite reaction.

Q Which exhibit do you refer to as showing that? A Plaintiffs' Exhibit No. 8.

Q Plaintiffs' Exhibit No. 8. On what do you base your statement that that shows that there is a reaction? A The increase in the viscosity of the oil over the same oil that has only been heated to 600 degrees, without the composition in it. You take your tubes, and you just turn them upside down (demonstrating).

Q I think you misunderstand the question. I am not questioning you as to whether there is a reaction with the oil; I am asking you if there is anything there that shows that there is a reaction between the maleic anhydride and the cobalt acetate, in which you said you produced a cobalt maleate. A The character of the oil is changed entirely, for the simple reason that this prepared oil will wrinkle, where it is shown there is a definite reaction there between all the elements concerned, both
the linseed oil and the cobalt and maleic acid. If
65 there wasn't any reaction, some of that material
will be remaining on the bottom of the kettle.

Q Isn't there a reaction between the oil and the maleic anhydride, even if the drier isn't present? A There will be a conjoining. Here is what is happening there, I am positive. The cobalt acetate has coated over the maleic anhydride, due to the fact that it is in a powdered condition, and that the gradual reaction, the oil penetrating in with the heat, causes the cobalt maleate to form insitu there.

Q That is your theory? A That is my theory.

Q That you are advancing now? A And I believe it is positively true, due to the fact that the pungent, acrid odor coming off of it is considerably less; there is less frothing in the kettle during the reaction.

Q When you speak of less, less with respect to what? A In other words, when we have a reaction in the kettle, there might be intensive bubbling or fumes coming off.

Q You are speaking now of the use of a mixture of maleic anhydride and the drier? A Yes, if there is a separate reaction, see, if they do not interact, then both—your maleic did not, but was just going out of the oil. You could almost see that white fume coming off the kettle, whereas, with the combination it is
66 just a gradual—the only thing you see coming off
actually is a small amount of water from the cobalt acetate, which is part of its composition.

Q Then, you are basing your theory that there is a reaction, I would gather, on what you have just said is a visual test, rather than the particular exhibits we have here. A Well, I wouldn't say it was entirely visual. I am basing it on my past experience and the actual final product.

Q When you heat oil with the maleic anhydride, doesn't the viscosity increase? A Very little, under this process.

Q Doesn't your patent say the viscosity increases? A I don't believe it has any mention of any viscosity.

Q Look on page 1, column 2, lines 14 and 15. A (Inspecting document.)

MR. STALEY: What was that citation again?

MR. SCHIMMEL: Page 1, column 2, lines 14 and 15 of your own patent.

BY MR. SCHIMMEL:

Q When you speak of adding the polycarboxylicacid and then heating, then you say,

"The batch is held at this temperature until it attains the desired body or viscosity,"

67 isn't that an increase in the viscosity? A That is correct.

Q That you are after? A That is viscosity we are after.

Q So, insofar as increasing the viscosity of the oil is concerned, you get that increase whether you use the acid alone or whether you use the mixture, don't you? A In terms, you would have an increase in the viscosity of any oil that is held under heat,—

Q I am asking you— A —whether there is any chemical present or not.

Q I am asking you with respect to your patent and with respect to which we have here, isn't there an increase in viscosity in both instances, over and above what you would get from just heating the oil alone? A Well, there is a—we are looking for an increase of viscosity, yes.

Q And you get an increase of viscosity, don't you? A Yes, we get an increase of viscosity, certainly.

Q And that would be the test you would use in order to determine when to stop heating, isn't it? A Yes, it would be correct.

Q When you take a varnish linseed oil and add a drier to it and heat it to the temperature, say, of 600 degrees Farhenheit, would you get a wrinkling composition? A Straight varnish linseed oil?

68 Q Yes. A You would not.

Q You would not. Now, you have testified that if you take the same varnish linseed oil and heat it according to the disclosure of your patent with maleic anhydride, that reaction product would not wrinkle, either; is that correct? A Will not wrinkle, that is correct.

Q But if you add, as I understand your testimony, to the latter heated product some drier, the composition will wrinkle, is that correct? A Add drier to it, yes.

Q Have you any exhibits which would show that? A No, we have no exhibits that show that right now.

Q In connection with Plaintiffs' Exhibit No. 6, which was the reaction product of the maleic anhydride and the cobalt acetate, before you added this to the varnish grade oil, did you analyze this to see if there was any maleic acid in here? A No, I did not, no. But I might get the odor of it to see, and I will tell you quick. (Testing by smelling.) It is there.

Q It is there. Would Plaintiffs' Exhibit 9 wrinkle: that is, the product of Plaintiffs' Exhibit 6 and the oil that had been heated together? A It did not
69 show as strong a wrinkling tendency as the—

Q But it will wrinkle? A I would say of no practical use. You haven't got a full value wrinkling oil there. In other words, in order to do that, I would have to increase the fusion process material to bring it up even to the wrinkle produced by the co-precipitant, by the co-reactive product.

Q Would you say that Plaintiffs' Exhibit 6 is a mixture of maleic acid and a drier? A I would say there is something lost in there in the fusion process.

Q But would you say it is still a mixture of maleic anhydride or acid and a drier? A I'd say it was more of a chemical compound than it was a mixture.

Q Is there free maleic acid in there? A There is enough, but I wouldn't say it is free maleic, but there is enough in there to give me a mighty good smell of it.

Q Or would you say that is maleic acid or anhydride in there? A Yes.

Q If it were in combination, you wouldn't smell it, would you? A Oh, there is a possibility with
70 any material of smelling it, a strong possibility.

Q But in your experience, wouldn't you say that from what you have indicated here, there is free maleic acid in there? A Not necessarily.

Q You wouldn't say that? A No, I wouldn't say positively on it, because there are lots—I am trying to think of some common, ordinary illustration to bring forth, but I cannot.

Q Well, I distinctly got the impression before—

THE COURT: What is your next question?

A Well, there are lots of materials that you could combine, and yet the residual odor would stay.

Now, here, I will take it right out from prior art—not prior art, but an illustration of today, being advertised, and that is this so-called Air-Wick.

BY MR. SCHIMMEL:

Q Let us not deviate that far. When I showed you the sample previously and asked you whether or not there was free maleic acid in there, you said you could tell by testing it by the sense of smell. A That is correct.

Q And as I recollect, you said there was, when you smelled it. A There was.

71 Q Now you are saying it is not necessarily true that you can tell that there is free maleic acid in there by the smell. I would like to know which one is your answer. A Well, I will have to say that there is a scent present resembling the odor of maleic anhydride. That is the best I can do on it.

Q And you would not want to say there was free maleic acid present? A I would not, no. That would require a chemical analysis to prove it.

THE COURT: We will recess now. You are not nearly finished, I take it.

MR. SCHIMMEL: I can finish very shortly. I think I have covered practically all I wanted to cover.

THE COURT: How long will it take you to finish?

MR. SCHIMMEL: It may be about two or three minutes.

THE COURT: All right.

BY MR. SCHIMMEL:

Q Isn't it also possible that when you add your mixture of acid and drier to the raw varnish oil and heat it to 400, you are producing essentially a boiled oil? A I would not intrepret it in that way whatsoever. I would rather call it a processed oil, because you have to draw a limit some place. A boiled oil, you are trying to limit it to boiled linseed oil. It is not comparable
72 to a boiled linseed oil whatsoever. We have, unfortunately, in the varnish trade, several different prepared oils. In a way, by just using the term "boiled" in its narrowest sense, they are all boiled oils.

THE COURT: What do you say, if you heat it to what?

MR. SCHIMMEL: If you take the mixture they are using of acid and the drier and add it to the raw varnish oil,—

THE COURT: And heat it to what?

MR. SCHIMMEL: —then heating to 400 degrees.

THE COURT: And that is not a boiled oil?

THE WITNESS: Your Honor, you have got to say that it is boiled because it is heated; that is about the size of it.

BY MR. SCHIMMEL:

Q Would you say that if you had two bottles, one with maleic acid, in one hand, and one with your cobalt acetate in the other hand, and added those to your boiled—to your heated, rather; let's stay away from the boiled—to your heated raw varnish oil, would you or would you not get the same result you do in this case? A I don't believe you would get anywhere near the same result, because what happens is that your maleic has gone on the one side and the cobalt on the other side.

Q You are mixing them, don't forget. A Now, you take another batch of boiled, is that correct?

73 Q Which batch? A You are taking a third—

Q No, no, you are taking your batch of raw varnish oil and you are agitating it while you are heating it, and you have two bottles, one of them maleic acid and one of cobalt acetate, and you add those to the oil while it is heating. Would you get the same result or not? A No, you would not, because your maleic anhydride would melt right in there and volatilize off, before the cobalt had been taken up in the oil.

Q Wouldn't there be some reaction of both materials with the oil? A You would get part reaction with each one of them, but not an intimate reaction. That is, cobalt and maleic would not react together; they would go straight into the oil. But they would not be selective under the bond that you are trying to pick out there.

Q And it is your theory that the cobalt acetate and the maleic acid have to react first before they react with the oil, in order to get the result? A I believe it is true.

MR. SCHIMMEL: I think that is all.

MR. STALEY: Your Honor, may I ask one or two questions?

Redirect Examination

BY MR. STALEY:

74 Q Mr. Waldie, do you have any authority for your definition of "boiled oil" that you gave? A Yes, I have. I refer to a copy of Jeff Stewart, Jeffrey Stewart's "National Paint Dictionary," published in 1948, at page 92, in which—

Q Would you please give the definition into the record? A "Boiled linseed oil: This term is a misnomer, since it is a material which is not boiled. Actually, it is raw linseed oil that has been heated in the presence of maleic drying compounds. The older method consisted in heating the oil by direct fire to a temperature of about 550 degrees Fahrenheit, at which point oxides of metals such as red lead, litharge, and manganese dioxide were added. More modern methods add soluble driers, such as resinates, lineolates, and naphthenates of lead, manganese and cobalt, to the oil, which is heated to lower temperatures than in the older process."

Q Mr. Waldie, in the art of wrinkle finishes, and to those who are skilled in the art, is a boiled oil considered a non-conjugated double bonded oil? A It is not.

MR. STALEY: That is all I have, Your Honor.

MR. SCHIMMEL: I would like to introduce my evidence into the record. There is a folder on Your
75 · Honor's desk which includes the three references
relied upon by the tribunals of the Patent Office, the two Root patents, and the Waldie patent.

In addition, I would like to introduce matter which I think possibly Your Honor could take judicial notice of, but in order to clarify the record, a definition from two dictionaries—and this is in connection with a couple of the claims about which nothing has been said so far, either within the Office or here: claims such as 6, for example, which include a dehydrating agent in the composition.

I would like to introduce in evidence these dictionary definitions of the particular materials that are used in this application as dehydrating agents, to show that the art is fully aware of their use for that purpose in analogous compositions.

THE COURT: Very well.

MR. SCHIMMEL: One is the "Uses and Applications of Chemicals and Related Materials." I would like to have that as Defendant's Exhibit 2.

The other is "The Condensed Chemical Dictionary," as Defendant's Exhibit 3.

THE COURT: Very well.

(Thereupon, photostatic excerpt from "Uses and Applications of Chemicals and Related Materials" was marked as Defendant's Exhibit No. 2 for identification, and was received in evidence.)

76 (Thereupon, photostatic excerpt from "The Condensed Chemical Dictionary" was marked as Defendant's Exhibit No. 3, and was received in evidence.)

MR. STALEY: I submit, Your Honor, that none of them, neither of the defendant's exhibits 2 or 3, were ever referred to in the prosecution of the patent application.

THE COURT: I understand that.

Well, you will get the briefs in. Yours is due—

MR. STALEY: Your Honor, one other thing. I don't know whether I have missed anything, but I would like at this time, in the event I have missed the introduction of an exhibit, just to make an offer of all the plaintiffs' exhibits.

THE COURT: Very well, they will be admitted.

(Thereupon, at 12:40 o'clock p.m., the trial of the above-entitled matter was concluded.)

Filed Jun 16 1952 Harry M. Hull, Clerk

Pltffs. Ex. # 1

PO-55 CA 2964-'49

DEPARTMENT OF COMMERCE
United States Patent Office

To all persons to whom these presents shall come, Greeting:

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of the File Wrapper and Contents, in the matter of the

Pending Application of
William A. Waldie,

Filed March 12, 1946, Serial Number 653,932,
for

Improvement in Wrinkle Catalyst.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this twenty-seventh day of December, in the year of our Lord one thousand nine hundred and fifty and of the Independence of the United States of America the one hundred and seventy-fifth.

/s/ John A. Marzall
Commissioner of Patents.

(SEAL)

Attest:
/s/ C. W. Sutton
Chief of Division.

Mail Division U. S. Patent Office Mar 12 1946

TOULMIN & TOULMIN
Attorneys-at-Law

Petition

No. 4246

To the Commissioner of Patents:

YOUR PETITIONER William A. Waldie a citizen of the United States, residing at Oakwood in the County of Montgomery and State of Ohio whose Post Office address c/o New Wrinkle, Inc., 1771 Springfield Street, Dayton 3, Ohio prays that Letters-Patent may be granted to him for the improvements in Wrinkle Catalyst as set forth in the annexed specification.

And he hereby appoints TOULMIN & TOULMIN (the sole member of which is Harry Aubrey Toulmin, Jr.), Dayton, Ohio his attorneys, to prosecute this application, to make alterations and amendments therein, to receive the LETTERS-PATENT, to sign the drawings, and to transact all business in the Patent Office, connected therewith. This power of attorney is to extend and apply to all divisional applications, re-issue applications and foreign applications to be filed on the invention covered by the foregoing application.

/s/ William A. Waldie
(Sign first given name in full)

Specifications

No. 4246

To All Whom It May Concern:

BE IT KNOWN, That I, William A. Waldie a citizen of the United States, residing at Oakwood in the County of Montgomery and State of Ohio have invented certain new and useful improvements in Wrinkle Catalyst of which the following is a specification, reference being had therein to the accompanying drawing:

This invention relates to wrinkle finishes and more particularly to a powder which, when added to a non-wrinkling oil or a non-wrinkling varnish base, produces wrinkling properties in the oil or varnish base.

Heretofore wrinkle coating compositions have been produced by using so-called wrinkling oils and/or by compounding the compositions by specific methods which have to be followed very strictly in order to obtain the results desired. Such wrinkling compositions used heretofore, however, have a number of drawbacks. In the first place, wrinkling oils are considerably more scarce and therefore more expensive than non-wrinkling oils. Furthermore, the preparation of wrinkle finishes by the customary methods, very often requires special skill and care so that the expense for highly skilled labor in the case of wrinkle finishes used to be pretty high.

It is an object of this invention to produce a dry powder mix which, when added to non-wrinkling oils or coating compositions, creates wrinkling properties therein.

It is another object of this invention to convert a non-wrinkling oil or varnish composition into materials of wrinkling characteristics by the mere addition of a powder mixture specifically compounded.

These and other objects of the invention will be evident from the following examples which are given by way of illustration only and not for the purpose of limitation.

EXAMPLE I.

Two pounds of maleic acid anhydride and one pound of manganese borate were mixed and ground together until a very fine granular, uniformly mixed powder was obtained.

In a separate vessel 50 pounds of Beckacite 1111, which is a maleic-treated rosin glycerine resin, were added to 8 gallons of varnish-grade linseed oil, and the mixture was then slowly heated to approximately 400° F. until the resin was fully dispersed. Then about 2 pounds of the maleic acid anhydride-manganese borate powder was added and the mixture heated to 590° to 600° F. for approximately 30 minutes. Thereafter the mixture was allowed to air-cool to approximately 350° F. when 10 gallons of high solvency petroleum naphtha and 0.75 gallons of Nuolate Cobalt 4% were added. The viscosity of the varnish thus obtained was Y as on the Gardner-Holdt scale.

Seven parts by volume of this varnish were thinned with 1 part by volume of naphtha solvent and the solution then sprayed on a test panel. After the panel was baked for one hour at approximately 275° F., a glossy hard film with a good wrinkle texture was obtained.

From the example set forth above it is obvious that by the addition of the texture modifying powder, the varnish composition, which is made up from varnish grade linseed oil only and which per se would not yield a wrinkled film, had been converted into a wrinkle coating composition.

EXAMPLE II.

50 lbs.	Beckacite 1111
2.5 lbs.	Modifying powder of Example I
10 gal.	Varnish grade linseed oil
12.5 gal.	Light petroleum naptha
1 gal.	Nuolate Cobalt, 4%

The varnish was prepared in accordance with the process used in Example I. It had a viscosity of J and, when baked, yielded a film of very fine wrinkle texture.

EXAMPLE III.

50 lbs.	Beckacite 1111
6 lbs.	Modifying powder of Example I
8 gal.	Varnish grade linseed oil
10 gal.	Light petroleum naptha
0.75 gal.	Nuolate Cobalt 4%.

The mixture cooked from the above ingredients had a viscosity X, and the film produced therefrom showed good, but somewhat coarser wrinkle texture than that of the preceding examples.

EXAMPLE IV.

Fifty pounds of #501 Kopol resin and 8 gallons of varnish grade linseed oil were heated to 400° F, whereupon two pounds of the above maleic anhydride—manganese borate mixture (Example I) was added. The batch was then heated to a temperature of from 590° to 600° F. until the mixture was so viscous that a drop thereof, when put on a glass plate, became stiff. After this viscosity desired was reached, the mixture was allowed to cool to approximately 350° F, and 10 gallons of light petroleum naptha and 0.75 gallons of Nuolate Cobalt, 4% were added. The viscosity obtained was J according to Gardner-Holdt, and the film obtained from the composition was of great hardness and showed fine wrinkle texture.

EXAMPLE V.

The same ingredients were used in this example as in Example IV. However, a slightly modified method was used in this case. The texture modifying powder was added to the varnish linseed oil alone at a temperature of approximately 350° F., and the temperature was then raised to 550° F. Thereafter the resin was added and the mixture heated to approximately 600° F. and held at that temperature until the desired viscosity was reached. The varnish base was then allowed to air-cool, and at 350° F. the thinner and drier were added.

A film produced from the varnish of this example was not quite as hard as that of Example IV, but more flexible and therefore especially qualified for the coating of flexible materials. The wrinkle texture was satisfactory and of medium coarseness.

In place of the maleic acid anhydride, maleic acid or other oil reactants, such as fumaric acid, may be used. Likewise, manganese borate, cobalt acetate, litharge, red lead, etc. may be substituted as texture producers for the manganese borate.

EXAMPLE VI.

For the production of the texture modifying powder, 3 pounds of fumaric acid and 1 pound of cobalt acetate were mixed and ground to a fine powder.

Separately 50 pounds of Amberol F-7, a rosin modified phenol-formaldehyde resin, were dispersed in a mixture of 6 gallons of soyabean oil and 2 gallons of linseed oil at a temperature of from 350° F. to 420° F. Thereafter about 2.5 pounds of the modifying powder was added and the temperature raised to 570-620° F. for approximately 40 minutes. The mixture was then allowed to cool, and at approximately 350° F. to 400° F., 10 gallons of toluol and 0.75 gallons of Nuolate Cobalt 4% were added. A panel coated with the composition thus obtained, after baking at a temperature of from 180° F. to 200° F. for approximately 2 hours, showed a very uniform, hard, fine wrinkled film.

Nuolate Cobalt 4% used in the above examples is a cobalt lino-resinate having a metallic cobalt content of 4%. It will be understood that Nuolate Cobalt 4% may be substituted by other drier compounds common in the art.

Likewise other thinners than those mentioned in the examples may be used without departing from the scope of this invention.

Kopol resin used in Examples IV and V is a fused Congo resin sold by Reichold Chemical Company. It will be understood that any other oil-soluble resin but those mentioned in the examples may be used for the process and product of my invention. The same applies to the oils for the production of the varnish base.

It will be understood that the essence of my invention is the conversion of any non-wrinkling varnish compounded according to processes known in the art into wrinkle finishes by the addition of a dry powder composed at least of an oil-reactant ingredient and one texture modifying substance. It has been found that a proportion of from 4:1 to 1:1 with regard to oil reactant and texture producer yields satisfactory results.

The modifying powder, however, may contain other additional ingredients. Thus, for example, it may include dehydrating agents, such as bentonite or silica gel.

Baking may be carried out either by regular or infrared heating. Regular heating at approximately 250° F - 300° F. for about one hour, 200° F. - 250° F. for about 2 hours or 150° F. - 200° F. for about 3 hours has been found advantageous.

It will be understood that while there have been described herein certain specific embodiments of my invention, it is not intended thereby to have the invention limited to or circumscribed by the specific details of procedure, materials, compositions or proportions herein set forth by way of example in view of the fact that this invention is susceptible to modifications according to individual preference or conditions without departing from the spirit of this disclosure and the scope of the appended claims.

I Claim:

1. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead compounds.

2. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead compounds, and a dehydrating agent.

3. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising maleic acid anhydride and manganese borate.

4. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkle coating compositions comprising an oil reactant and a texture producer in the proportion of from 1 to 4 parts by weight of oil reactant per one part of texture producer.

5. A wrinkling oil composition comprising a non-wrinkling oil and a texture modifying powder comprising an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead compounds.

6. A wrinkling oil composition comprising a non-wrinkling oil and a texture modifying powder comprising an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent.

7. A wrinkle oil composition comprising a non-wrinkling oil and a texture modifying powder consisting of from 1 to 4 parts by weight of maleic acid anhydride per 1 part by weight of manganese borate.

8. In a method of producing wrinkling oil compositions the steps of heating non-wrinkling oil to a temperature of from 350° F. to 420° F. and adding a texture modifying powder comprising an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead compounds.

9. A wrinkle varnish composition comprising a non-wrinkling varnish base and a texture modifying powder comprising an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead compounds.

10. In a process of converting a non-wrinkle varnish composition to a wrinkling coating composition comprising the steps of heating the non-wrinkling varnish composition to a temperature of from 350° F. to 420° F., adding a texture modifying powder comprising an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead compounds, and heating the mixture to a temperature of from 570° F. to 620° F. for a time of approximately 30 minutes.

11. In a process of converting a non-wrinkle varnish composition to a wrinkle coating composition comprising the steps of heating a resin-oil dispersion to a temperature of approximately 350° F., adding 0.5 to 2.5%, with regard to the varnish, of a texture modifying powder consisting of 2 parts of maleic acid anhydride and 1 part of manganese borate to the dispersion, then heating it to a temperature of from 590° F. to 600° F. for a time of from 30 to 40 minutes, allowing the mixture to

cool to 400° F. to 350° F., and then adding thinner and drier.

IN TESTIMONY WHEREOF, I affix my signature

Inventor
/s/ William A. Waldie
(Sign first given name in full)

Oath

Our No. 4246

State of Ohio
County of Montgomery ss.

William A. Waldie the above-named petitioner, being duly sworn, deposes and says that he is a citizen of the United States, and resident of Oakwood in the County of Montgomery and State of Ohio and that he verily believes himself to be the original, first and sole inventor of the improvemnt in Wrinkle Catalyst described and claimed in the annexed specification; that he does not know and does not believe that the same was ever known or used before his invention or discovery thereof; or patented or described in any printed publication in any country before his invention or discovery thereof; or more than one year prior to this application, or in public use or on sale in the United States for more than one year prior to this application; that said invention had not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said improvement has been filed by him or his representatives or assigns in any foreign country.

/s/ William A. Waldie
(Sign inventor's name in full)

SWORN TO and subscribed before me this 8th day of March 1946.

/s/ Alvina C. Hopkins 'nee' Floyd
Notary Public
Montgomery County, Ohio

My Commission expires Dec. 23, 1946

(SEAL)

Acknowledgment should be made before a Notary Public, who must attach his seal. If, however, the oath is taken before a Justice of the Peace, a certificate of the nearest Judge or Clerk of the Court, showing that said Justice is qualified must be attached.

U. S. Patent Office Sep 20 1946 Mailed

Address only

The Commissioner of Patents,
and not any official by name

Div. 64 Room 7600

DEPARTMENT OF COMMERCE
United States Patent Office

Washington 25, D. C.

Paper No. 2

All communications respecting this application should give the serial number, date of filing, and name of the applicant

Please find below a communication from the EXAMINER in charge of this application.

/s/ Casper W. Ooms
Commissioner of Patents

Applicant: William A. Waldie
Ser. No. 653,932
Filed Mar. 12, 1946
For WRINKLE CATALYST

Toulmin & Toulmin
Toulmin Building
Dayton, Ohio

References made of record:

Waldie	2,392,346	Jan. 8, 1946 filed Jan. 31, 1942	106-222 XR
Root	1,883,408	Oct. 18, 1932	106-221

Claim 1, 2, 5, 6, 8, 9, and 10 are rejected as containing an improper Markush grouping. Although "manganese borate, cobalt acetate, and lead compounds" are sometimes classified as *driers,* they do not have a sufficient community of chemical and physical properties to be classified in a Markush group.

Claims 1, 2, 5, 6, 8, 9, and 10 are rejected as indefinite and unduly broad in the recitation of "lead compounds".

Claim 4 is rejected as indefinite and vague in the recitation of "oil reactant" and "texture producer".

Claims 1 to 3, 5, 6, 8, 9, and 10 are rejected as unduly broad for failing to indicate the proper proportions of the "oil reactant" and the "texture producer". It is obvious that the proportions are critical.

Claim 2 is rejected as indefinite in the term "dehydrating agent".

Claims 5, 6, 7, and 8 are rejected as indefinite and unduly broad in the recitation of "non-wrinkling oil".

Claims 5, 6, 7, and 8 are rejected as unduly broad. The examples disclose the addition of the "modifying powder" oil to varnishes and not to oils, per se.

Claims 1 to 4 are rejected as unpatentable over Waldie in view of Root. Waldie and Root have disclosed the efficacy of maleic anhydride and manganese borate as agents which materially aid the formation of "wrinkle finishes". Nothing patentable is discerned by claiming well known "wrinkling" aids.

Claims 1 to 11 are rejected as unpatentable over Waldie in view of Root. Waldie discloses the addition of maleic anhydride to a "non-wrinkling" varnish followed by the addition of driers in order to produce a "wrinkling" type of varnish. Root discloses the use of manganese borate as a drier for "wrinkle finishes". It would not involve invention to first make a varnish and then add the maleic anhydride and driers as disclosed by applicant or make the entire composition as disclosed by applicant in his prior patent No. 2,392,346. The essential feature appears to be the fact that the maleic anhydride or its equivalents react with the oil. This is evident from the patent.

Claims 1 to 11 are also rejected as unpatentable over the claims of Pat. No. 2,392,346 in view of Root. It is not considered patentable to carve out a part of a complete process and claim it to be novel.

No claim is allowed.

/s/ P. M. Nash
Examiner

ML:NKS

MAIL DIVISION Feb 10 1947 U. S. Patent Office

UNITED STATES PATENT OFFICE

In re application of
William A. Waldie

Serial No. 653,932

Filed March 12, 1946

For WRINKLE CATALYST

Div. 64
Room 7600

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

Responsive to the Office letter of September 20, 1946, the application is amended as follows:

In the specification, page 4, Example IV, line 4, change "mangenese" to —manganese—.

Claim 1, line 8, strike out "compounds", and insert instead —oxides—.

Claim 2, line 7, strike out "compounds", and insert instead —oxides—; last line, cancel the period, and add —selected from the group consisting of bentonite and silica gel.—.

Claim 4, line 5, after "reactant", insert —selected from the group consisting of maleic acid, maleic acid anhydride, and fumaric acid—; same line, cancel the period, and add —selected from the group consisting of manganese borate, cobalt acetate and lead oxides.—.

Claims 5, 6 and 8, line 2 of each, cancel "non-wrinkling", and insert instead —non-conjugated double-bonded—; last line of each, cancel "compounds", and insert instead —oxides—.

Claim 7, line 2, cancel "non-wrinkling", and insert instead —non-conjugated double-bonded—.

Claim 9, line 7, cancel "compounds", and insert instead —oxides—.

Claim 10, line 10, cancel "com-", and insert instead —oxides—; line 11, cancel "pounds".

Remarks

Claims 1, 2, 5, 6, 8, 9 and 10 have been rejected as containing an improper Markush group. The Examiner himself states that all three of the materials of this group are classified as driers; moreover, in the case of the instant invention, all three of them have the same function as acting as texture producer. Thus, the elements of the Markush group admittedly have two important properties in common, and it is therefore believed unfair to hold the Markush group improper. It is respectfully requested that the Examiner reconsider the claims with the Markush group, especially since the applicant does not have any other way of grouping the operative compounds together, another reason for which Markush groups have been held allowable heretofore.

The same claims have been also rejected as too broad in the term "lead compounds". This objection has been overcome by amendment.

Claim 4 has been rejected as indefinite in the recitation of "oil reactant" and "texture producer"; both of these terms have been more narrowly defined so that this claim now seems to be in proper form.

Likewise, the term "dehydrating agent" in claim 2 has been limited to the composition specified in the application.

The term "non-wrinkling oil" has been replaced by "non-conjugated double-bonded" in claims 5, 6, 7 and 8.

Claims 5, 6, 7 and 8 are held to be too broad, and the Examiner states that the examples do not disclose the addition of the modifying powder to the oils. The Examiner obviously overlooked Example V in which the modifying powder is added to the oil rather than to the varnish.

Claims 1 to 4 have been rejected as unpatentable over Waldie in view of Root. Waldie's formulas, in addition to their being directed to a mixture produced by a different method than that of the invention and to having cobalt driers in proportions different from those claimed in the more specific claims, do not use any of the dry powdered texture producers employed in the instant invention. One of the most essential features of the application is that a dry powdered material may be added to any non-wrinkling coating composition and by this be transformed into a wrinkling composition.

This certainly is not taught by and cannot be inferred from Waldie's disclosure. It is therefore not surprising that the product obtained according to Waldie's patent is different from that obtained with the method of the invention, the product of the invention having a greater hardness and drying much faster than that prepared according to Waldie's patent. Root's patent does not deal with non-wrinkling oils; he repeatedly points out in his patent that blowing of linseed oil is a necessity and that at least one-half of the oil present in his composition has to be a so-called wrinkling oil. However, the most vital discrepancy in Root's patent from the process of the invention is that he does not use in his formulas any of the oil reactants which form one of the two essential elements of applicant's products.

Consequently, neither of the two patents taken alone anticipates the applicant's invention, and it cannot be seen how the Examiner can combine the two references so as to synthesize an anticipatory reference.

It is submitted that the claims as now amended contain patentable subject matter and are in proper form; favorable action is therefore respectfully requested.

Respectfully submitted,

/s/ Toulmin & Toulmin
Attorneys for Applicant

Dayton, Ohio
February 8, 1947
Address only
The Commissioner of Patents,
and not any official by name

Div. 64 Room 7600

DEPARTMENT OF COMMERCE

United States Patent Office
Washington 25, D. C.

Paper No. 4

All communications respecting this application should give the serial number, date of filing, and name of the applicant

Jul 25 1947

Please find below a communication from the EXAMINER in charge of this application.

/s/ Casper W. Ooms
Commissioner of Patents

Applicant: William A. Waldie
Ser. No. 653,932
Filed Mar. 12, 1946
For WRINKLE CATALYST

Toulmin & Toulmin
Toulmin Bldg.
Dayton, Ohio

Responsive to amendment filed February 10, 1947.

Additional references cited:

Root	1,950,417	Mar. 13, 1934	106/221

The disclosure and claims are considered to be indefinite in the use of the terms "non-wrinkling oil" and "wrinkling oil." Since no clear, consistent line of distinction between these two types of oil is recognized in the art, it is necessary for applicant to define what is meant in this application by references to "wrinkling oils" and "non-wrinkling oils." While applicant apparently intends linseed oil as a non-wrinkling oil, it is evident from the patent to Root, 1,950,417, that the prior art recognized linseed oil as a wrinkling oil. See page 2, column 1, lines 11-18 and lines 37-41.

The rejection of claims 1-3, 5, 6, 8, 9, and 10 as being too broad in not indicating the proportion of "oil reactant" and "texture producer" in the modifying powder is repeated. The proportions are believed to be critical.

Claims 5-8 are again rejected as too broad in reciting the addition of the modifying powder to oils, per se. In example V, referred in applicant's argument, the modification is in the point at which the modifying powder is added and not in the substance to which it is added. While the modifying powder is added before the varnish has been produced, it is none-the-less evident from the example that it is in the varnish produced that the alleged invention produces its effect and not in the oil per se.

All claims are rejected as aggregative. There is no indication that the components of the modifying powder cooperate to produce any effect other than the effects of the "oil reactant" and "the texture producer" exercising their separate functions in the dry powder mixture.

Claims 1-11 are again rejected as unpatentable over Waldie in view of the patent to Root, of record, and the patent to Root here cited. Waldie shows the use of maleic anhydride to a "non-wrinkling" varnish to produce a "wrinkling" coating composition. Both patents to Root show the use of the substances recited by applicant as "texture producers" in the production of "wrinkling" coating compositions. Patent 1,950,417 shows the use of raw linseed oil as a component of wrinkle finish compositions.

No claims are allowed.

/s/ J. Greenwald
Act. Examiner.

BWB/jem

U. S. PATENT OFFICE
Received Oct 23 1947 Division 64

UNITED STATES PATENT OFFICE

In the application of William A. Waldie
Serial No. 653,932
Filed March 12, 1946
For WRINKLE CATALYST
Div. 64 Room 7600

Hon. Commissioner of Patents
Washington 25, D. C.

Sir:

Responsive to the Office letter of July 25, 1947, the application is amended as follows:

In the specification:

Page 1, line 7, after "oils" insert a comma and—which are conjugated double-bonded oils,—.

Page 2, line 5, after "oils" strike out the period and add—or non-conjugated double-bonded oils.—.

In the claims:

Claim 1, line 3, after "comprising" insert—from 2 to 3 parts by weight of—; line 6, after "and" insert—1 part by weight of—.

Claim 2, line 3, after "comprising" insert—from 1 to 4 parts by weight of—; line 5, before "a" insert —1 part by weight of—.

Claim 3, line 3, after "comprising" insert—2 parts by weight of—; last line, after "and" insert—1 part by weight of—.

Claim 5, line 1, strike out "A wrinkling" and insert—An—; same line, after "composition" insert—which dries to a wrinkle-textured film—; line 3, after "comprising" insert—1 to 4 parts by weight of—; line 5, after "and" insert—1 part by weight of—.

Claim 6, line 1, strike out "A wrinkling" and insert—An—; same line, after "composition" insert—which dries to a wrinkle-textured film—; line 3, after "comprising" insert—from 1 to 4 parts by weight of—; line 5, before "a" insert—1 part by weight of—.

Claim 7, line 1, strike out "A wrinkle" and insert—An—; same line, after "composition" insert—which dries to a wrinkle-textured film—.

Claim 8, line 1, strike out "wrinkling"; line 2, after "compositions" insert—that dry to wrinkle-textured films—; line 4, after "comprising" insert—from 1 to 4 parts by weight of—; line 6, after "and" (second occurrence) insert—1 part by weight of—.

Claim 9, line 3, after "comprising" insert—from 1 to 4 parts by weight of—; line 5, after "and" (second occurrence) insert—1 part by weight of—.

Claim 10, line 6, after "comprising" insert—from 1 to 4 parts by weight of—; line 8, before "a" insert—1 part by weight of—.

Remarks

The Examiner considered non-wrinkling oil and wrinkling oil indefinite; a definition has been added in the specification and the claims have been rephrased with regard to these expressions so that this objection has been overcome. This also clarifies the use of linseed oil as a non-wrinkling oil. Root, in his patent 1,950,417, when speaking about linseed oil as a wrinkling oil, always refers to blown linseed oil and not to raw linseed oil.

The proportion of oil reaction and texture producer has been added in all of the claims as requested by the Examiner.

Claims 5 to 8 have been rejected as too broad in reciting the addition of the modifying powder to oils per se. It is true that in Example V, after reaction of the modifying powder with the linseed oil alone a resin is added. However, the modifying powder is usable as well and was intended to be used for the modification of oils alone. This is obvious from the specification page 2, lines 12 to 13 and lines 14 to 15 where it is pointed out that non-wrinkling oils or coating compositions or varnish compositions may be modified by the powder of the invention. It is therefore respectfully requested that the Examiner drop his rejection of claims 5 to 8 as being too broad.

All claims have been furthermore rejected as aggregative, and the Examiner holds that merely a total of the functions of the individual ingredients is obtained with the modifying powder. This however is not the fact, since neither the oil reactant by itself nor the texture modifier by itself creates wrinkling properties in the non-wrinkling materials. The combination of the two types of materials is absolutely necessary in order to obtain the desired result. For this reason the invention does not represent an aggregation but a true combination.

Claims 1 to 11 have been rejected as unpatentable over Waldie in view of the two patents to Root. None of these references disclose or suggest the concept of the instant invention, none using a dry powder for the purpose of converting non-wrinkling materials into wrinkling materials. The patent to Waldie adds a polycarboxylic acid to his resin composition; he also adds a *drier* consisting of a cobalt salt *solution*. He does not add however a powder consisting of cobalt acetate, manganese borate or lead oxide and maleic acid or anhydride or fumaric acid. The Examiner will notice that in addition to this dry texture modifier, the applicant uses such cobalt solution as a drier. From this it is obvious that the cobalt drier employed in Waldie's patent does not take the place of the texture producer.

Similarly the patents to Root do not indicate the addition of a dry mixture of texture producer and oil reactant for the purpose of converting non-wrinkling into wrinkling materials. Since none of the references even suggest the concept of the invention, a combination of any of the three references cannot create the object of the invention. It is therefore believed that the combination of the references is improper.

The patents to Root emphasize half of the oil used there has to be a wrinkling oil, and in all of the examples given blown oils are mentioned. There is not one example which is based entirely on a non-wrinkling oil.

It is true that Root, in his patent 1,950,417, uses manganese borate as a drier, however, as set forth above manganese borate by itself does not have the effect the applicant's powder mixture has. On page 3, lines 51 to 56 of this patent, Root points out that these driers primarily hasten the hardening action and that "they also *speed up* the wrinkling *somewhat*" (emphasis added).

It is submitted that all of the Examiner's formal objections have been overcome by amendment. It is also submitted that the references neither alone nor in combination represent anticipatory matter. Allowance of the claims is therefore respectfully requested.

Respectfully submitted,

/s/ Toulmin & Toulmin
Attorneys for Applicant

Dayton, Ohio

October 15, 1947

Div. 64 Room 7600 Paper No. 6

Address only The Commissioner of Patents, and not any official by name

All communications respecting this application should give the serial number date of filing, and name of the applicant. Mailed Dec 5 1947

DEPARTMENT OF COMMERCE

United States Patent Office
Washington 25, D. C.

Please find below a communication from the Examiner in charge of this application. Casper W. Ooms, Commissioner of Patents. GPO 16—27315-4

Ser. No. 653,932
Filed Mar. 12, 1946
For WRINKLE CATALYST

Toulmin & Toulmin
Toulmin Bldg.
Dayton, Ohio

Responsive to amendment of October 18, 1947.

The rejection of claims 5-8 as too broad in the recitation of the addition of the modifying powder to oils per se is repeated. Applicant's arguments have been carefully considered, but claims to the modification of a non-wrinkling oil per se by the addition of the powder composition disclosed are not supported by any examples set forth in the specification and the rejection of claims 5-8, reciting this feature, is still considered sound.

All the claims are again rejected as aggregative. Both ingredients of the modifying powder disclosed and claimed are known for use in the production of wrinkling finishes. Applicant's arguments on this point have been carefully considered. However, it is still considered that there is no indication of any cooperation of the components of the modifying powder to produce any effect other than the effects of the individual components exercising their separate functions in the powder mixture.

Claims 1-11 are again rejected as unpatentable over Waldie in view of the patents to Root. Waldie teaches the addition of polycarboxylic acid to a "non-wrinkling" varnish to produce a wrinkling coating composition. Both Root patents disclose the use of the substances recited by applicant as "texture producers" in the production of wrinkling compositions. Patent 1,950,417 teaches that the use of manganese borate, among other driers, has an effect on the production of wrinkling finishes. Root 1,950,417 on page 2, column 1, lines 13-16 shows that raw linseed oil is contemplated as one of the oils treated in accordance with the invention disclosed by Root. No invention is seen in the addition of the manganese borate disclosed by Root to the composition disclosed by Waldie, or in the addition of the polycarboxylic acid disclosed by Waldie for use in the production of wrinkling finish compositions, to the composition disclosed by Root.

No claim is allowed.

This action is now made *Final.*

/s/ P. M. Nash
Examiner

BWB:nks

Mail Division Jan 3 1948 U. S. Patent Office

UNITED STATES PATENT OFFICE

In the application of
William A. Waldie

Serial No. 653,932 Div. 64
Filed March 12, 1946 Room 7600

For WRINKLE CATALYST

Hon. Commissioner of Patents
Washington 25, D. C.

Sir:

Responsive to the Office letter of December 5, 1947, the application is amended as follows:

Claims 5, 6 and 7, line 1 of each, strike out the first amendment and the word "oil" and insert instead—A coating—.

Claim 8, line 1, strike out the word "oil" and insert instead—coating—.

Claim 9, line 1, strike out "varnish" and insert instead —coating—.

Claim 10, line 2, strike out "varnish" and insert instead —coating—; line 4, strike out "the" and insert instead —a—.

Claim 11, line 2, strike out "varnish" and insert instead —coating—.

Remarks

The Examiner rejected Claims 5 to 8 as too broad in the recitation of the addition of the modifying powder to oils per se. It is still believed that this rejection is unsound. There is no rule nor a decision which prescribes that all compositions operative have to be disclosed in the specification by way of examples. The patent law merely rules that examples for the *best* embodiments have to be given in the specification. This direction has been complied with in the instant case, since the resin-containing compositions were found to be the most satisfactory ones.

That the introductory phrase of claims 5 to 8 is "an oil composition" whereas claims 9 to 11 are directed to a wrinkle varnish, should not be of any importance. It is old in the art to use wrinkling oils by themselves for the same purpose as resin-containing varnish type coating compositions, and the addition of resin and drier is thus not a necessity but merely represents an improvement with regard to the wrinkling composition based on the oil only.

However, both groups of claims have been amended with regard to their introductory phrases and been brought into agreement by directing them simply to "coating compositions".

That in similar cases a 3-component composition was not considered too broad when 4-and-5 ingredient compositions have also been disclosed, is evident from the decision rendered by the District Court of the District of Massachusetts in re The A. S. Boyle Company v. Siegle Hardware and Paint Company, 40 U.S.P.Q. 94 where it was held that:

> "Some claims were for five ingredients, some for four, and some for three; composition with only three ingredients had never been put on market by patentee; court finds that three-ingredient composition is shown by tests to be useful and that claims for three ingredients are valid and not broader than the invention although formulae in specification includes five ingredients."

It is thus believed that the rejection of Claims 5 to 8 as too broad is not justified and should be withdrawn.

All of the claims have been rejected as aggregative, and the Examiner holds that both of the ingredients of the modifying powder are known for the use in the production of wrinkle finishes. No evidence, however, is given for such previous knowledge, and in particular is there no passage in the art of record from which the addition of an "oil reactant" nor that of a "texture producer" for the *production* of a wrinkle texture is obvious. Likewise, there is no reference in the prior art cited which discloses the modifying powder as such, nor is there any reference which describes the method of producing a wrinkling material by the addition of the modifying powder. Consequently since the elements of the invention are not known per se, the combination is not known either; whether the novel composition is an aggregation or combination, should therefore be of no bearing on the patentability of the invention.

Claims 1 to 11 have been rejected as unpatentable over Waldie in view of the patents to Root. The Examiner holds that Waldie teaches the addition of polycarboxylic acid to a non-wrinkling varnish in order to produce a wrinkling coating composition. This holding is erroneous, since Waldie in his patent adds maleic acid for the purpose of modifying his alkyd resin and not for the purpose of creating a wrinkling tendency in his coating composition. The applicant in his invention starts out with a maleic-treated rosin glycerine resin (see page 2 of the specification, last line) and then to this maleic modified resin adds another amount of maleic acid together with the texture producer for the purpose of transforming the composition into a wrinkling composition.

Thus, Waldie does not use an oil reactant because in his case the maleic acid is absorbed for modifying the resin and not for converting the oil or coating composition. Moreover, he does not use a powdered texture producer. It is true that Waldie uses cobalt drier solutions of a very low concentration; these drier solutions, however do not have the effect which the applicant's dry texture producer powder has. Altogether Waldie does not disclose the use of any of the two ingredients forming the modifying powder of the invention, and an anticipation is therefore simply impossible.

Root, in his patent No. 1,883,408, uses metal compounds which the applicant adds as the texture producing means. However, Root does not add these compounds for the purpose and with the result of converting a non-wrinkling material into a wrinkling material. Root, in all of his examples, uses wrinkling oil, and he furthermore emphasizes repeatedly that at least 50% of the oil used in his compositions has to be a wrinkling oil. It is referred to page 2, lines 9 to 12 and lines 103 to 112. Thus, Root's compositions, containing an essential amount of wrinkling oil would wrinkle without the addition of any texture producer and consequently he does not teach in his patent No. 1,883,408 how to convert a non-wrinkling varnish into a wrinkling varnish.

Root even points out the purpose for which he adds the drier salts; the Examiner's attention is invited to page 3, lines 55 to 63, where it is set forth that the driers modify the rate of oxidation and thereby the wrinkled effect.

Root furthermore does not use a combination of an oil reactant and a texture modifier nor does the patent to Waldie, as has been outlined above. Consequently the combination of Waldie with the Root patent No. 1,883,408 cannot lead to the process or product of the invention.

In his patent No. 1,950,417 he also uses a wrinkling oil-containing composition (see page 2, lines 117 and 124). The passage quoted by the Examiner, namely page 2, Col. 1, lines 13 to 16, cannot be construed by itself in view of the repeated emphasis made in the specification of the

Root patent on the absolute necessity of the presence of at least 50% of wrinkling oil in the oil used. Therefore this patent to Root does not teach the use of raw linseed oil. In fact, all of Root's examples recite mixtures which contain exclusively wrinkling oils and thus would dry to a wrinkle textured coating without the addition of any drier salts or texture producers. On page 3, lines 55 and 56, Root explains that the driers in his case are added to hasten the hardening action and to "speed up" the wrinkling "somewhat", but not in order to *cause* the wrinkle texture.

None of the Root patents uses an oil reactant, nor does Waldie although he adds maleic acid. It has been set forth that Waldie's maleic acid is consumed for the modification of his alkyd resin.

It is submitted that the rejections of all of the claims has been made in error and it is respectfully requested that the claims be reconsidered. It is also requested that the amendment be entered if not to bring the application into condition for allowance, then for the purpose of appeal.

Respectfully submitted,
/s/ Toulmin & Toulmin
Attorneys for Applicant

Dayton, Ohio
January 2, 1948

Mail Division U. S. Patent Office Mar 2 1948
Board of Appeals U. S. Patent Office Mar 5 1948

IN THE UNITED STATES PATENT OFFICE

In the application of
William A. Waldie

Serial No. 653,932 Division 45
Filed March 12, 1946

For WRINKLE CATALYST

Appeal

Hon. Commissioner of Patents
Washington 25, D. C.

Sir:

Appeal is hereby taken from the final rejection of Claims 1 to 11, inclusive, as set forth in the Office action dated December 5, 1947. The reasons for appeal are as follows:

1. The Examiner erred in rejecting Claims 1 to 11 on the art of record and for the reasons of record.

2. The Examiner erred in rejecting Claims 5 to 8 as too broad on the ground that no example is given in the specification for the addition of the modifying powder to the oils per se.

3. The Examiner erred in rejecting Claims 1 to 11 as aggregative.

4. The Examiner erred in holding that both ingredients of the modifying powder are known in the art for use in the production of wrinkle finishes.

5. The Examiner erred in rejecting Claims 1 to 11 as unpatentable over Waldie in view of the patents to Root.

6. The Examiner erred in holding that Waldie teaches the addition of polycarboxylic acid to a non-wrinkling varnish to produce a wrinkling coating composition.

7. The Examiner erred as to matters of fact.

8. The Examiner erred as to matters of law.

A hearing is requested.

The appeal fee of $15.00 is forwarded herewith.

Respectfully submitted,

/s/ Toulmin & Toulmin
Attorneys for Applicant

Dayton, Ohio
March 1, 1948

Div. 64 Room 7600 Paper No. 10

DEPARTMENT OF COMMERCE

UNITED STATES PATENT OFFICE
Washington 25, D. C.

In re application of
William A. Waldie Mailed Oct 11 1948

Ser. No. 653,932
Filed: March 12, 1946

For: WRINKLE CATALYST

BEFORE THE BOARD OF APPEALS
ON APPEAL NO. 16,418

Examiner's Statement

This is an appeal from the rejection of claims 1 to 11 (all of the claims in the case).

1. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating

compositions comprising from 2 to 3 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

2. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent selected from the group consisting of bentonite and silica gel.

3. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising 2 parts by weight of maleic acid anhydride and 1 part by weight of manganese borate.

4. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkle coating compositions comprising an oil reactant and a texture producer in the proportion of from 1 to 4 parts by weight of oil reactant selected from the group consisting of maleic acid, maleic acid anhydride, and fumaric acid per one part of texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

5. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder comprising 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected

from the group consisting of manganese borate, cobalt acetate and lead oxides.

6. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent.

7. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder consisting of from 1 to 4 parts by weight of maleic acid anhydride per 1 part by weight of manganese borate.

8. In a method of producing oil compositions that dry to wrinkle-textured films the steps of heating non-conjugated double-bonded oil to a temperature of from 350° F. to 420° F. and adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

9. A wrinkle varnish composition comprising a non-wrinkling varnish base and a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

10. In a process of converting a non-wrinkle varnish composition to a wrinkling coating composition comprising the steps of heating the non-wrinkling varnish com-

position to a temperature of from 350° F. to 420° F., adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and heating the mixture to a temperature of from 570° F. to 620° F. for a time of approximately 30 minutes.

11. In a process of converting a non-wrinkle varnish composition to a wrinkle coating composition comprising the steps of heating a resin-oil dispersion to a temperature of approximately 350° F., adding 0.5 to 2.5%, with regard to the varnish, of a texture modifying powder consisting of 2 parts of maleic acid anhydride and 1 part of manganese borate to the dispersion, then heating it to a temperature of from 590° F. to 600° F. for a time of from 30 to 40 minutes, allowing the mixture to cool to 400° F. to 350° F., and then adding thinner and drier.

References relied on are:

Waldie	2,392,346	Jan. 8, 1946
Root	1,950,417	Mar. 13, 1934
Root	1,883,408	Oct. 18, 1932

The Subject Matter

The subject matter of the application relates to a dry powder mixture which, upon addition to a non-wrinkling coating composition, will convert such a composition to a coating composition having wrinkling properties. The dry powder mix comprises a drier selected from the group consisting of manganese borate, cobalt acetate, and lead oxide and a polycarboxylic acidic substance selected from the group consisting of maleic acid, fumaric acid and maleic acid anhydride.

The References

Waldie discloses a process for the production of wrinkling compositions, based upon an oil such as linseed oil, which comprises heating an oil and a resin to a temperature of approximately 400° F, adding to the oleoresinous composition a polycarboxylic acid or its anhydride, and continuing the heating at a temperature of about 550° F. Subsequently solvent and driers are added.

Both patents to Root disclose wrinkle coating compositions comprising an oil, a resin and a solvent and including a substance of the type referred to by applicant as a "texture producer." The particular driers recited by applicant are disclosed by Root in his patents. Patent 1,950,417 shows the use of raw linseed oil as a component of wrinkle finish compositions.

The Rejection

Claim 1 defines a dry powder mixture consisting of a drier from the recited group of driers and a polycarboxylic acid or anhydride from the recited group of such substance in the proportions of 2 to 3 parts of acidic substance to 1 part of drier.

Claim 2 differs from claim 1 in the recitation of a broader range of proportions in which the acidic substance is present, and in the inclusion of either bentonite or silica gel as a dehydrating agent.

Claim 3 is specific to manganese borate as the drier and to maleic acid anhydride in the proportions of 1 part by weight of drier to 2 parts by weight of anhydride.

Claim 4 differs from claim 2 only in the omission of the dehydrating agent.

Claim 5 defines a wrinkle finish oil composition comprising a non-conjugated double-bonded oil and the dry powder mixture of claim 4.

Claim 6 defines a similar composition but having a dehydrating agent present in the dry powder.

Claim 7 is specific to the use of maleic acid anhydride and manganese borate as the components of the dry powder mixture.

Claim 8 defines a method for producing wrinkle finish oil compositions which comprises heating a non-conjugated double-bonded oil to 350°-420° F. and then adding the dry powder mixture of claim 4.

Claim 9 defines a wrinkle varnish composition comprising a non-wrinkling varnish, one based on a non-conjugated double-bonded oil, and the dry powder mixture of claim 4.

Claim 10 defines a process for converting a non-wrinkling varnish to a wrinkle finish varnish which comprises adding to the heated varnish composition, at 350-420° F., a dry powder mixture as recited in claim 4, and heating the mixture to a temperature of 570°-620° F.

Claim 11 defines a similar process in which the relative proportion of dry powder mixture added to the varnish is set forth, and in which the specific powder mixture of claim 3 is used.

Claims 5-8 are rejected as too broad in the recitation of the addition of the dry powder mixture to oils per se. None of the examples set forth in the specification show the addition of the powder to an oil alone. Applicant has argued that Example V showed the addition of a dry powder mix to the oil per se. It is pointed out that the final composition obtained in this example is a varnish, resin being added after the powder, and that it is in this final varnish composition that the dry powder mixture exercises its effect rather than in the substance to which it is added.

All of the claims are rejected as aggregative. There is no evidence to show that the components of the dry powder mixture cooperate to produce any effect other than the effects of the individual components exercising their separate functions in the dry powder mixture. Both the polycarboxylic acid substance and the drier are known for use in the production of wrinkle finishes. Waldie clearly discloses the addition of maleic anhydride, or other polycarboxylic acids or anhydrides, to a varnish based on a non-conjugated double-bonded oil, and the resultant formation of a wrinkle finish composition. Root, Patent 1,950,417 on page 3, column 1, at lines 47-56, attests to the effect of driers, including those recited by applicant; in producing a wrinkled finish. Since each element of the combination is thus seen to be old as an agent for producing wrinkling finishes and since no cooperative effect has been shown to result from their admixture it is considered that claims 5-8 are properly rejected on the grounds of aggregation.

Claims 1-11, all of the claims in the case, are rejected as unpatentable over Waldie in view of the patents to Root. Waldie has disclosed a process which comprises heating a resin and an oil to about 400° F., adding maleic anhydride to the oleoresinous composition at the elevated temperature, carrying the temperature to about 550° F., and, after cooling to about 400° F., adding a drier thereto. Both Root patents disclose the particular driers recited by applicant for use in the production of wrinkling finishes. Patent 1,950,417 discloses the specific drier of claims 3, 7 and 11, manganese borate, and teaches that it is an important element in wrinkling compositions, effecting the rate of oxidation of the wrinkling oil and speeding up the wrinkling. No invention is seen in the use of the specific driers disclosed by Root in lieu of the driers used by Waldie, nor is the addition of the polycarboxylic acid substance together with the drier to a prepared varnish rather than making up the entire composition as disclosed by Waldie. Further, it would not involve invention to add a polycarboxylic acid substance to the wrinkling varnish composition disclosed by Root in view of the teaching by Waldie of the effect of polycarboxylic acids or their anhydrides on varnishes based on non-conjugated double-bonded oils. Root 1,950,417 on page 2, column 1, at lines 13-16 specifically discloses raw linseed oil as a drying oil suitable for use in wrinkling compositions.

Applicant has argued that Waldie is not pertinent since Waldie adds the polycarboxylic acid for the purpose of modifying his alkyd resin. It is pointed out, page 2, column 1, lines 56 and 57, that the resin used by Waldie may be an already maleic acid modified alkyd resin. Waldie further states that he may use natural resins, page 2, column 1, lines 63-65. The stated purpose of the invention in the Waldie patent is to produce wrinkling compositions from linseed oil, a non-conjugated double-bonded oil. Attention is further directed to Example VI of the instant application and to Examples II and III of the Waldie patent, all of which disclose the preparation of a wrinkle finish composition by dispersing Amberol F-7, a rosin modified phenol-formaldehyde resin, in a non-wrinkling oil and adding a polycarboxylic acid substance and cobalt driers thereto. For the above reasons it is considered that applicant's arguments are not sufficient to overcome the Waldie reference. The facts do not support applicant's contention that Waldie, in his patent, adds maleic acid only for the purpose of modifying his alkyd resin.

Applicant argues that Root 1,950,417 is not pertinent since the compositions to which Root adds the driers are wrinkling oil-containing compositions. But among the oils which Root discloses as wrinkling oils is raw linseed oil, the specific oil with which applicant is chiefly concerned in the instant application. Therefore the addition of such driers as manganese borate to linseed-oil-containing compositions is within the scope of the invention disclosed by Root in Patent 1,950,417. Applicant further argues that the cited portion of Patent 1,950,417, namely page 2, column 1, lines 13-16 cannot be construed by itself as teaching the use of raw linseed oil. No necessity is seen for construing the clear and unambiguous statement made there by Root. If necessary, reference may be had to the entire paragraph, page 2, column 1, lines 8-47, for a more complete exposition of the inclusion of raw linseed oil in the generic class of wrinkling oils. For the foregoing reasons it is considered that Root adequately discloses the addition of a drier, such as manganese borate, to a linseed oil composition together with the resultant effect of the drier in producing a wrinkle finish.

In conclusion it is submitted that the rejection of claims 1-11 is sound and should be sustained.

/s/ R. Lubowitz
Acting Examiner

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Dayton, Ohio.
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The Commissioner of Patents
Washington, D. C.

Paper No. 10

DEPARTMENT OF COMMERCE

United States Patent Office
Washington

December 22, 1948

Sir:

The case of William A. Waldie

Appeal No: 16,418
Serial No: 653,932

will be heard by the Board of Appeals on the

15th day of June 1949

The hearings will commence at 9:30 a. m. and as soon as the argument in one case is concluded, the succeeding case will be taken up.

The time allowed for argument is thirty minutes.

By special leave, obtained before the argument is commenced, the time may be extended.

Briefs must be filed TWENTY (20) DAYS before the day of hearing. (Rule 137, amended September 6, 1945.)

Very truly yours,

/s/ Lawrence C. Kingsland
Commissioner of Patents.

Refer to APPEAL NUMBER

To Toulmin and Toulmin
Toulmin Bldg.
Dayton, Ohio

Mail Division U. S. Patent Office May 25 1949

Board of Appeals U. S. Patent Office May 26 1949

UNITED STATES PATENT OFFICE
BEFORE THE BOARD OF APPEALS

In re application of
William A. Waldie

Serial No. 653,932 Appeal No. 16,418
Filed March 12, 1946

For: WRINKLE CATALYST

Brief for the Applicant

This is an appeal from the final decision of the Primary Examiner in Division 64, dated December 5, 1947, whereby Claims 1 to 11, inclusive, were rejected. No claims are allowed in this application.

The Appealed Claims

The claims on appeal are:

1. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising from 2 to 3 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

2. A dry texture modifying powder for the conversation of a non-wrinkle coating compositions to wrinkling coating compositions comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric

acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent selected from the group consisting of bentonite and silica gel.

3. A dry modifying powder for the conversion of nonwrinkle coating compositions to wrinkling coating compositions comprising 2 parts by weight of maleic acid anhydride and 1 part by weight of manganese borate.

4. A dry modifying powder for the conversion of nonwrinkle coating compositions to wrinkle coating compositions comprising an oil reactant and a texture producer in the proportion of from 1 to 4 parts by weight of oil reactant selected from the group consisting of maleic acid, maleic acid anhydride, and fumaric acid per one part of texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

5. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder comprising 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

6. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent.

7. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil

and a texture modifying powder consisting of from 1 to 4 parts by weight of maleic acid anhydride per 1 part by weight of manganese borate.

8. In a method of producing oil compositions that dry to wrinkle-textured films the steps of heating non-conjugated double-bonded oil to a temperature of from 350° F. to 420° F. and adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

9. A wrinkle varnish composition comprising a non-wrinkling varnish base and a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

10. In a process of converting a non-wrinkle varnish composition to a wrinkling coating composition comprising the steps of heating the non-wrinkling varnish composition to a temperature of from 350° F. to 420° F., adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and heating the mixture to a temperature of from 570° F. to 620° F. for a time of approximately 30 minutes.

11. In a process of converting a non-wrinkle varnish composition to a wrinkle coating composition comprising

the steps of heating a resin-oil dispersion to a temperature of approximately 350° F., adding 0.5 to 2.5%, with regard to the varnish, of a texture modifying powder consisting of 2 parts of maleic acid anhydride and 1 part of manganese borate to the dispersion, then heating it to a temperature of from 590° F. to 600° F. for a time of from 30 to 40 minutes, allowing the mixture to cool to 400° F. to 350° F., and then adding thinner and drier.

Nature of the Invention

This invention deals with an entirely new concept in the field of preparation of wrinkle finishes.

Heretofore wrinkle finishes have been prepared by compounding fluid mixtures of ingredients, some of which had to be specially treated as by blowing non-wrinkling oils before incorporation into the mixture.

The ingredients have been incorporated one by one with intervals of cooking to insure homogenity.

Applicant now presents claims to a new process and the dry powder utilized in the process. This process changes the old method in that a non-wrinkling coating composition containing drying or semi-drying oils may merely by the addition to the mixture of a powdered material be transformed into a wrinkling composition.

This powdered material, as pointed out in Example I, on page 2 of the specification, is a combination of ingredients ground together into an intimate mixture of fine, granular, uniformly mixed powder. Neither of these ingredients of itself creates wrinkling properties in the non-wrinkling compositions. The combination of the two types of material is necessary to obtain the desired result. Their intimate intermixing and their introduction at one time, gives rise to the effects accomplished.

It becomes apparent, therefore, that applicant is presenting claims to a different process from that shown in the prior art and by which a new result is obtained. The instrument for accomplishment of the result is a new combination of reagents which are used in ground powdered form.

Discussion of the References

The claims of the instant application have been rejected on the basis of patents to:

Waldie 2,392,346 and Root 1,883,408 and 1,950,417.

Waldie teaches the addition of maleic anhydride to a fluid oil and resin mixture being cooked to thoroughly disperse the resin. After the cooking is complete, and the mixture cooled, the solvent and drier solution is added to the base vehicle.

Waldie nowhere suggests addition of a powder consisting of cobalt acetate or manganese borate or lead oxide, together with maleic acid or maleic anhydride or fumaric acid to a non-wrinkling composition to convert it to a wrinkling composition.

Similarly, the patents to Root do not suggest or teach applicant's new approach to the problem of preparation of wrinkle finish compositions.

Root does not suggest or teach the addition of a dry mixture of texture producer and oil reactant for the purpose of converting non-wrinkling compositions into wrinkling compositions.

Root in his patent 1,883,408 does suggest that compounds which the applicant uses as one component of his multi-component powder be added to wrinkling solutions as a drier. However, this component will not of itself convert non-wrinkling compositions to wrinkle compositions.

Root adds his manganese borate and cobalt acetate merely as a drier to speed up the surface hardening.

Root's wrinkling compositions are prepared by the standard method of pre-treating the oils (if of the non-wrinkling type and convertible as by blowing), cooking the oil and resin to completely dissolve the resin and adding to the cooled mixture the thinner and drier.

Nowhere in this patent is there a suggestion of adding to a mixture of non-wrinkling oil and resin being cooked, a powder containing polycarboxylic acids and a texture modifier selected from the group of cobalt acetate, manganese borate and lead oxide, and heating the resultant mixture until by plate test the mixture becomes stiff, following which the normal addition of thinner and drier is made.

This reference fails to have a teaching which alone anticipates applicant's invention or to have a teaching of the use of the manganese borate at the stage and for the purpose of applicant so as to be transferable for combining purposes.

As a transfer teaching Root would merely teach use of manganese borate as a drier added at the normal stage for drier addition, which normal stage is after cooking the oil and resin. Such a showing does not teach addition of manganese borate to a mixture to be cooked.

The same may be stated with regard to Root 1,950,417. In this patent Root teaches cooking resin with raw oils, such as china wood oil and resin. After the cooking manganese borate and additional oil are added and upon raising the temperature slightly to insure complete uniformity of solution, the mixture is cooled and thinned.

Root does not add oil reactants and does not teach cooking into a non-wrinkling oil mixture the texture producers such as manganese borate.

Root merely adds the drier component in the regular manner at the end of the cook. Root in his patent emphasizes that in order to produce a wrinkle finish his mixture (quote)

"must contain a substantial portion of a wrinkling oil, admixtures of the non-wrinkling oils may be used so long as the amount of the latter is not *sufficient to eliminate* the desired wrinkle effect in the finish obtained."
(emphasis added)

Such an explanation taken verbatim from the reference clearly shows that there was no thought of converting non-wrinkling compositions to wrinkling compositions.

Root merely wished to modify the wrinkling characteristic of a composition by diluting the wrinkling solution with non-wrinkling oil.

Statements made by Root regarding use of raw linseed oil cannot be taken without regard to the general test. Raw linseed oil is mentioned as a drying oil. However, Root makes no claim to wrinkling raw linseed oil. Root quotes wrinkling character only for *blown* linseed oil, and then explains his process in later passages, part of which is quoted above.

Thus, raw linseed oil takes on no added meaning in Root not attributable to any other non-wrinkling oil used as an oil diluent. The emphasis placed upon its mention by the Examiner is entirely misplaced.

Nor do the references combine to suggest applicant's invention. Root says add manganese borate as a drier either after cooling or just prior to cooling. This teaching added to Waldie suggests nothing more than the substitution of manganese borate for Nuodex Cobalt, which are well known equivalents when used as driers.

It does not teach that manganese borate should be ground with maleic anhydride to form a companion mix which powder mix when added to non-wrinkling oil-resin mixture being cooked converts the non-wrinkling composition to a wrinkling composition.

Nor does transferring the teaching of Waldie regarding maleic anhydride teach applicant's invention, because adding maleic anhydride to a composition which naturally gives a wrinkle finish does not teach how to make a non-wrinkling composition wrinkle.

For these reasons the rejection on the references alone or in combination appears unsustainable as having pertinent teaching.

Other Grounds of Rejection

Claims 5 to 8 were rejected as too broad in the recitation of the addition of the modifying powder to oils alone.

No rule nor decision requires that every modification of an invention be disclosed by way of example. It is sufficient that the operativeness of the process be established by examples and that the applicability of the process to materials other than the example components be positively pointed out in the specification.

This applicant has done in his specification by stating on page 2 that it is "an object of this invention to produce a dry powder mix which, when added to non-wrinkling oils or coating compositions, creates wrinkling properties therein."

Oils treated by applicant's method are wrinkling compositions in their own right. It should not, therefore, be less patentable than the compositions containing resins in addition to the oils.

A decision believed to be squarely in point was rendered by the District Court of the District of Massachusetts, *In Re The A. S. Boyle Company* v. *Siegle Hardware and Paint Company,* 40 U.S.P.Q., 94, where it was held that:

> "Some claims were for five ingredients, some for four, and some for three; composition with only three ingredients had never been put on market by patentee; court finds that three-ingredient composition is shown by tests to be useful and that claims for three ingredients are valid and not broader than the invention although formulae in specification includes five ingredients."

It is thus believed that the rejection of claims 5 to 8 as too broad is not sustainable and the Examiner should be reversed.

Further, all the claims have been rejected as aggregative. It is the Examiner's holding that merely a total of the functions of the individual ingredients is obtained with the modifying powder.

Analysis of the functions of each component fails to sustain such a holding. The oil reactant by itself does not create wrinkle properties. This is borne out by a number of patents wherein it is shown that maleic acid treated-non-wrinkling oils merely are increased in viscosity. (Rosenblum 2,189,833, Clocker 2,188,890)

Texture modifiers, such as manganese borate, likewise will not cause non-wrinkling oils to wrinkle. The combination of the two types of material is necessary to obtain the desired result. When there is cooperation to produce a desired result, the elements represent true combination, not aggregation.

This point is illustrated by such decisions as *Sachs et al* v. *Hartford Electric and Supply Company,* 47 Fed. (2d), 743, decided by the Circuit Court of Appeals of the Second Circuit, wherein it was stated:

"The cooperation of the means necessary to create an invention is to be measured by the purpose to be fulfilled, not by the interaction of the parts. Each factor must indeed be a condition to that result, but the whole may be a mere assemblage; the cooperation between them all may be no more than their necessary presence in a unit which shall answer a single purpose."

While the above decision was rendered in a mechanical case, when dealing with the question of combinations the law in chemical patents indicates no substantial difference from that applied to mechanical devices. It is the combination of the several ingredients that is patentable. Whether the combination be of new or old elements, or partly one and partly the other, the result is patentable if a new result is obtained. See, for example, *Tumbler v. Baltimore Paint and Color Works,* 11 Fed. Supp., 183.

A similar holding with regard to process claims, illustrated by the decision in *Corwell* v. *Baker Oil Tools, Inc.,* 68 U.S.P.Q., 385, is believed to have a direct bearing upon the consideration of applicant's process claims. It was therein stated:

"Given a new and useful combination of steps (old or new or both), the patentability of the process depends exclusively upon the quality or skill or genius involved in the combination and its results. If the result is new and desirable, or even if the same be accomplished in an economical and useful manner, the invention may be patentable."

In view of these decisions, applicant submits that the claims herein present a new invention, accomplishing a result in a new and useful manner, and therefore the claims are not open to rejection on the ground of aggregation.

Conclusion

In view of the foregoing, it is respectfully submitted the Examiner is in error in his rejection of all the claims and that his decision should be revised and reversed in order that justice may be had in the premises.

Respectfully submitted,

/s/ Toulmin & Toulmin
Attorneys for Applicant

By /s/ H. A. Toulmin, Jr.

Address Only
The Commissioner of Patents
Washington, D. C.

Letter No. 12

DEPARTMENT OF COMMERCE

United States Patent Office
Washington

Mailed Date Jun 1 1949

In re Appeal No. 16,418

Applicant: William A. Waldie

Ser. No.: 653,932

To: The Board of Appeals.

On review and consideration of the brief in the above mentioned appeal, no further comments are deemed to be necessary.

/s/ P. M. Nash
Examiner, Div. 64

Attorney's name Toulmin & Toulmin,
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Jun 30 1949 Mailed Paper No. 13

U. S. PATENT OFFICE

Board of Appeals

Appeal No. 16418

Hearing: June 15, 1949

IN THE UNITED STATES PATENT OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte William A. Waldie

Application for Patent filed March 12, 1946, Serial No. 653,932. Wrinkle Catalyst.

Messrs. Toulmin & Toulmin for appellant.

This is an appeal from the action of the Examiner finally rejecting claims 1 to 11, inclusive, all of the claims in the application.

Claims 3, 7 and 11 are reproduced as best describing the subject matter on appeal:

3. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising 2 parts by weight of maleic acid anhydride and 1 part by weight of manganese borate.

7. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder consisting of from 1 to 4 parts by weight of maleic acid anhydride per 1 part by weight of manganese borate.

11. In a process of converting a non-wrinkle varnish composition to a wrinkle coating composition comprising the steps of heating a resin-oil dispersion to a temperature of approximately 350°F., adding 0.5 to 2.5%, with regard to the varnish, of a texture modifying powder consisting of 2 parts of maleic acid anhydride and 1 part of manganese borate to the dispersion, then heating it to a temperature of from 590°F. to 600°F. for a time of from 30 to 40 minutes, allowing the mixture to cool to 400°F. to 350°F., and then adding thinner and drier.

The references relied on are:

Root	1,883,408	Oct. 18, 1932
Root	1,950,417	Mar. 13, 1934
Waldie	2,392,346	Jan. 8, 1946

This application describes a coating composition capable of drying to produce a wrinkle finish surface. Appealed claims 1 to 4, inclusive, relate to a mixture used to impart wrinkle characteristics to otherwise non-wrinkling coating compositions. Claims 5, 6, 7 and 9 relate to the wrinkle producing varnish composition and claims 8, 10 and 11 relate to the process of compounding the wrinkle finish varnish. We have reproduced above the most specific form of claim in each of the three categories.

All of the claims have been rejected as unpatentable over Waldie in view of the patents to Root. Waldie describes and claims wrinkle finish coating compositions and methods of compounding such compositions. The procedure described by Waldie in connection with Example 1 differs from that specified in claim 11, quoted above, only in the inclusion of manganese borate with the maleic anhydride as a so-called "texture modifying powder." The patentee suggests the addition of a drier during the cooling period after heating the other components together. Manganese borate is a conventional drier which, as shown by Root, may be used in wrinkle finish compositions. See Root No. 1,883,408, page 3, lines 55 to 63.

Appellant asserts that Waldie does not disclose a mixture of maleic anhydride and manganese borate and does not disclose the addition of thees two components together prior to bodying the oil by heat. Appellant asserts that the general practice of the prior art in preparing wrinkle finish varnishes is to use a boiled or blown oil and to add the driers only after the remaining components have been properly combined.

There has been considerable argument as to whether the reference by Root to raw linseed oil refers to the use of such oil as the principal oil component of a wrinkle finish varnish. We do not believe that the question is pertinent to the claims in consideration since such claims are not limited to the use of raw linseed oil and, furthermore, the heating to a temperature of 590 to 600°F. prevents any assertion that "raw oil" is still present in the finished composition. While there are assertions in the brief to the effect that the present expedient of mixing maleic amide and manganese borate prior to compounding these components in the varnish gives better results, we find no evidence supporting that assertion.

The present claim 11 differs from Waldie only in the addition of a part of a conventional drier such as manganese borate with the maleic anhydride prior to the cooking operation at 590 to 600°F. Since there is no evidence that this particular change in the order of heating the ingredients, or the selection of manganese borate for that purpose, is of material advantage, we agree with the Examiner that no invention is involved. We note Webster's New International Dictionary, 2nd Ed. Unabridged, 1941, under the heading "boiled oil" describes this material:

"an oil whose drying properties have been increased by heating, usually with driers, as lead and manganese oxides or salts."

It thus appears to be common practice to incorporate driers in boiled oils. We find no error in the Examiner's action in refusing all of the claims as unpatentable over Waldie in view of the Root patents.

Claims 5 to 8, inclusive, have also been refused as too broad by reason of the failure to include resins in the composition. We are of the opinion that the specification sufficiently suggests the addition of the powder mixture to oils to defeat this rejection.

All of the claims were further rejected as aggregative. We cannot see how that rejection can be applied to method claims 8, 10 and 11. These claims define a series of steps adapted to produce a varnish composition and, in the absence of art, would properly define the subject matter. We are of the opinion that the charge of aggregation cannot be sustained as to claims 8, 10 and 11.

Claims 5, 6, 7 and 9 each describe a complete varnish composition, and while the various components thereof may each independently contribute its qualities or functions, we do not think that this objection is sufficient to sustain a rejection for aggregation, as to these claims.

Claims 1, 2, 3 and 4 are directed to a dry powder mixture of maleic acid and manganese borate or other drier. These components do not react with each other. The mixture apparently possesses no utility in itself and is at best merely a convenient mixture used in compounding the wrinkle finish varnishes. Nothing of record justifies a conclusion that the two components possess any cooperative relationship to each other. A claim to a mere mixture of non-reactive, uncooperative components of this character is believed to be properly reject-

The decision of the Examiner is affirmed.

In event of appeal attention is directed to *In re* Boyce, 32 C.C.P.A. 718; 144 Fed. (2nd) 896; 1944 C.D. 609; 568 O.G. 568; 63 U.S.P.Q. 80 in regard to specifically including in the appeal notice *all* grounds of rejection in the Examiner's statement not expressly overruled by the Board.

/s/ S. Wolffe
Examiner-in-Chief

/s/ E. W. Geniesse
Examiner-in-Chief

/s/ Illegible signature
Examiner-in-Chief (Acting)
Board of Appeals

June 30, 1949

Messrs. Toulmin & Toulmin,
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Dayton, Ohio.
Address Only
The Commissioner of Patents
Washington, D. C.

DEPARTMENT OF COMMERCE

United States Patent Office
Washington

Re: William A. Waldie
Serial No. 653,932
Filed March 12, 1946

Wrinkle Catalyst

Notice of Civil Action Under Section 4915 R. S.

A civil action under Section 4915 R. S., entitled New Wrinkle, Inc. and William A. Waldie v. Lawrence C. Kingsland, Commissioner of Patents, Civil Action No.

2964-49, involving this application, was filed on July 12, 1949, in the United States District Court for the District of Columbia.

/s/ W. W. Cochran
Solicitor

July 13, 1949

Filed Jun 16 1952 Harry M. Hull, Clerk

Defts Ex #2 end

USES AND APPLICATIONS

of Chemicals and
Related Materials

A Guide to the Current Industrial Uses; Potential
Applications and Sales Possibilities
of 5167 Products

Compiled and edited

by

THOMAS C. GREGORY

Consulting Chemist and Specialist in Market and
Literature Research

Founded on data published in the Oil, Paint and Drug Reporter under the titles:

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Library June 2 1944 U. S. Patent Office

Beeswax (Yellow and Bleached) **(Continued)**

Oils and Fats

Base of various lubricating compositions.

Ingredient of—
- Axle greases, gun oils.
- Lubricating grease compounded of castor oil, mineral oil, and aluminum stearate (U. S. 1881591).
- Special lubricants.

Paint and Varnish

Ingredient of—
- Paints, preparations containing dry colors, special floor waxes, varnishes, wood-fillers.

Paper

Ingredient of—
- Compositions used in the manufacture of carbon paper.
- Preparations used in making waxed paper.
- Sizings for high-gloss paper.
- Emulsified sizing compositions (Brit. 287514).

Shortening agent (U. S. 1894731) for—
- Phenol-tung oil-formaldehyde resinous coating for stencil paper.

Perfume

Raw material in making—
- Creams, pencils, pomades.

Pharmaceutical

In compounding and dispensing practice.

Printing

Ingredient of—
- Compositions used for the preparation of acidproof coatings for plates in the electrotyping process.
- Compositions used for making matrices in galvanoplastic work.

Process material in—
- Lithography, photoengraving, process engraving.

Resin and Wax

Ingredient of—
- Electrotypers' wax, sealing wax, shoemaker's wax.

Rubber

Filler in making—
- Rubber compositions.

Stone

Waterproofing agent (Brit. 287514), used either alone or in admixture with other substances, for treating—
- Artificial stone, natural stone.

Textile

Assistant agent (Brit. 397881) in—
- Stretching cellulose acetate filaments.

Ingredient of—
- Compositions used for finishing.
- Compositions used for sizing.
- Compositions used in the manufacture of waxed cloth.
- Emulsified dressing (Brit. 287514).

Waterproofing coating, composed of blown asphalt, rubber, and wax, for cellulose fibers (U. S. 1880036).
Water proofing compositions (Brit. 287514).

Waterproofing agent in treating—
Yarns and fabrics.

Woodworking

Ingredient of—
Compositions used in the finishing of furniture and of lumber used for parquet floorings.

Behenolic Acid Chloride

Chemical

Starting point (Brit. 407956) in making pour-point improvers for machine oils, gear oils, and other lubricants by condensing with—
Anilin, anthracene oil.
Aromatics obtained by destructive hydrogenation or by dehydrogenation.
Benzene.
Cracking gases containing gaseous olefins (ethylene, propylene, and butylene).
Cyclic terpenes, ethylnaphthalene, liquid olefins, middle oil, naphthalene, naphthols, naphthylamines, nitrated aromatics, phenols, tars, toluene, xylene.

Ben Oil

Synonyms: Behen oil, Behn oil, Ben nut oil, Sorinja oil.
Latin: Oleum belanium, Oleum been, Oleum behen.
French: Huile de ben, Huile de ben, aile; Huile de binj.
German: Behenoel, Bennussoel, Benoel, Moringaoel.
Spanish: Olio de ben.
Italian: Olio di ben.

Food

Ingredient of special food preparations.

Mechanical

Lubricant, alone or in mixtures, for—
  Delicate machinery, clocks, watches, precision instruments.

Perfumery

Ingredient of—
  Creams, lotions, pomades.

Extractive medium for obtaining floral odorous principles by maceration.

Fixative for—
  Fugative perfumes.

Ingredient of—
  Jasmine perfumes, oil antique, tuberose perfumes, violet perfumes.

Perfume in various cosmetics.

Reagent in—
  Enfleurage processes.

Pharmaceutical

Suggested for use as rebefacient in rheumatism, as a laxative and bland.

Bentonite

Abrasives

Ingredient of—
  Abrasive wheels, stones, and the like, added so as to cut down on the amount of binding clay required.

Agricultural

Ingredient of—
- Cattle dips, added in order to increase the wetting power of the dipping fluid and used in place of soap.
- Seed-disinfecting compositions (Brit. 267968).

Analysis

Desiccating agent in laboratory processes.

Ceramics

Ingredient of—
- Compositions for the manufacture of electrical and chemical porcelain, added to cut down on the amount of binding clay required.

Plasticizing agent in—
- Correcting short products, making various products.

Suspending agent in making—
- Glazes.

Cement

Ingredient of—
- Cements, added so as to increase their mechanical strength and quicken their setting.

Retarding agent in making—
- Gypsum plasters.

Chemical

Absorbent in general use.

Accelerator in making—
- Emulsions of various sorts.

Dehydrating agent in general use.

Ingredient of—
- Asphalt residue emulsions.

Coaltar residue emulsions.
Compositions containing sticky and tacky materials at ordinary temperatures, that ball during grinding, added to facilitate the operation and prevent balling.
Pitch residue emulsions.

Stabilizer in making—
Emulsions.

Suspending agent for—
Solids in liquid mediums.

Dye

Base in making—
Lake colors.

Explosives and Matches

Filler in making—
Nitroglycerin dynamites and permissibles.
Nitrostarch explosives.

Fats and Oils

Clarifying and bleaching agent.

Dehydrating agent.

Ingredient of—
Compound lubricants.

Fertilizer

Filler in various compositions.

Glues and Adhesives

Ingredient of various preparations.

Ink

Ingredient of—
Printer's ink.

Bentonite (Continued)

Insecticide

Sticking or spreading agent in—
  Sprays and dusts.

Metallurgical

Bonding agent for—
  Molding sand compositions.

Ingredient of—
  Core washers.
  Ground coats in dry enameling processes.
  Mixtures used in metal enameling, resulting in improved suspension of fine ingredients.
  Wet enamel compositions, to cut down amount of clay required.

Mining

Ingredient of—
  Compositions containing soap, used for laying the dust in coal mines.

Miscellaneous

Extracting agent in removing—
  Asphalt content of tar sands.

Ingredient of—
  Crayons, in place of clay; indelible leads, pastel colors, pencils, in place of clay; shoe polishes.

Sizing agent for—
  Cordage.

Stabilizing agent in—
  Roofing compositions.

Paint and Varnish

Filler in—
  Enamels, lacquers, paints, varnishes.

Ingredient of—
  Cold-water paints, distempers, kalsomines.

Substitute for whiting in making—
  Putties.

Paper

Filler in—
  Cardboard, paper.

Ingredient of—
  Waterproofed paperboard.

Reagent in—
  Overcoming gumming of wire used on the papermaking machine.
  Promoting retention of china clay used as a loading agent.
  Removing carbon black in reworking old newsprint.

Petroleum

Cleansing agent in treating—
  Gasoline, lubricating oils, kerosene.

Dehydrating agent in treating—
  Crude oil, gasoline.

Refining and clarifying agent.

Perfumery

Ingredient of—
  Dusting powders, facial clay packs, toilet creams, toilet powders.

Pharmaceutical

In compounding and dispensing practice.

Refractories

Ingredient of—
  Graphite compositions for crucibles, furnace linings, and the like.

Rubber

Filler in various compounds.

Ingredient of—
  Bentonite-rubber emulsions.

Soap

Ingredient of—
  Detergent compositions, scouring soaps, special soaps.

Textile

—, *Finishing*

Filler for various fabrics.

Size for—
  Cotton fabrics and yarns.

Scouring agent in treating—
  Fabrics and yarns.

—, *Dyeing*

Mordant for—
  Fabrics and yarns.

Reagent in—
  Bottom dyeing yarns.

—, *Printing*

Ingredient of—
  Color pastes.

Water and Sanitation

Softening agent in treating water.

Benzaldehyde

Synonyms: Artificial oil of bitter almond, Benzoic aldehyde.
Latin: Benzaldehydum.
French: Aldehyde benzoique.
German: Benzaldehyd, Künstliches bittermandeloel.

Agricultural

Antiseptic (Brit. 278818) in—
Animal foods.

Flavoring agent (Brit. 278818) in—
Animal foods.

Beverage

As a flavoring agent.

As a substitute for oil of bitter almond.

Ingredient of—
Various mixtures of essential oils, essences, ethers, tinctures, and other substances, used in making flavors for cordials, liqueurs, and other alcoholic and non-alcoholic beverages; typical of such flavors is ethereal cherry oil flavor, composed of benzaldehyde, amyl acetate, amyl butyrate, oil of lemon, oil of sweet orange, oil of clove, and oil of cassia.

Chemical

Reagent in making—
Acetylbenzyl peroxide, (acetozone benzoxate, benzozone).
Diethylbenzaldehydeacetal.

Oxyphenylbenzyl ketone.
Phenylbenzoylcarbinol.
2-Phenylquinolin-4-carboxylic acid (atophan, cinchophen).

Starting point in making—
Benzaldoxime, benzaldehydephenylhydrazone, benzoic acid, benzoyl chloride, benzyl aclohol, benzyl benzoate, benzyl dichloride, benzylidene acetone, benzylideneanthrone, benzylideneazin, cinnamic acid, cinnamic aldehyde.
Condensation products with (a) primary amines; for example, formation of benzylideneanilins; (b) tertiary amines; for example, formation of substituted diamino derivatives of triphenylmethane; (c) sodium salts of fatty acids; for example, formation of unsaturated acids; (d) fatty aldehydes, ketones, and the like; for example, formation of unsaturated aldehydes or ketons.
Halogenated derivatives, mandelic acid.
Nitro derivatives, such as meta-, ortho-, or paranitrobenzaldehyde.
Polymerization products, sulphonated derivatives.

Dry Cleaning

Spotting agent for—
Mercurochrome stains—(1) Boil 45 minutes in soapy water; (2) spot; (3) spot with 25 percent hydrochloric acid; (4) rinse.

Dye

Starting point in making—
Acid green, acidiol green B, acridin dyes, acridin orange R, benzoflavin, carmine blue, carmine green, ethyl green, guinea green B, malachite green, triphenylmethane dyes.

Food

As a flavoring agent.

As a substitute for oil of bitter almond.

Ingredient of—
- Flavoring extracts.
- Imitation almond flavor, containing also glycerin, water, and glycopon XS.
- Nonalcoholic almond flavors of the paste type.

Glues and Adhesives

Improver (U. S. 1895433) of—
- Water-resistant qualities of casein glues, by addition to the wet glue base in conjunction with a retarder which may be an aromatic sulphonic acid or a soluble copper, nickel or calcium salt.

Laundering

Spotting agent for—
- Mercurochrome stains (for method see under "Dry Cleaning").

Perfume

Ingredient of—
- Cosmetics.
- Medicated perfume, containing also oil of lavender, camphor, methol, thymol, oil of rosemary, methyl salicylate, and terpenless oil of bay.
- Perfumes.

Defts Ex #3 end

Filed Jun 16 1952 Harry M. Hull, Clerk

The Condensed
CHEMICAL DICTIONARY

A reference volume for all requiring quick access to a large amount of essential data regarding chemicals, and other substances used in manufacturing and laboratory work

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1942

It is marketed in paste and powder form.

"Shirlan" A (a dispersed salicylanilide solution). Trade name product.
Containers: Drums (100 lbs., net).
Use: A non-toxic fungicide for mildew-proofing of textiles. Particularly designed for use with "Aridex" water-repellents.

"Shirlan" D (a water-dispersible salicylanilide composition). Trade name product. Light brown powder.
Containers: Drums (175 lbs., net).

Use: A non-toxic fungicide for mildew-proofing of textiles.

"Shirlan" Extra (Salicylanilide). Trade name product. Brown powder.

Containers: Drums (175 lbs., net).

Use: A non-toxic fungicide for mildew-proofing of textiles.

"Shirlan" NA. Brand name for a proprietary product. A water-soluble form of "Shirlan." It is specially recommended for addition to the water used in conditioning cotton and wool yarns.

Shiu Oil (Apopino oil).

A Japanese essential oil of high linalool content sold as a substitute for linalool oil. The various samples seen have shown considerable variation in physical properties, probably due to adulteration.

Constants of sample A:

Sp.gr. 0.870 to 0.883; optical rotation —14° to —16°; refractive index about 1.4606.

Constants of sample B:

Sp.gr. 0.870 to 0.8952 at 15°C.; optical rotation —0° 51′ to —15° 30′; acid value up to 0.6; ester value 0.5 to 28.

Solubility in alcohol: 1.8 to 10 vols. of 70% alcohol.

Derivation: Distilled from a Japanese tree of unknown classification.

Railroad shipping regulations: None.*

Shorts.

A term used in flour-milling. Shorts are that part of the husk or outer coat of the wheat finer than bran (q.v.). See also Pollards.

Shot Metal. See Lead shot metal.

Shumac. See Sumac.

Sialagogues. A class, or group, name given to certain chemicals and pharmaceutical products to indicate, or describe, their usefulness in medicine. Sialagogues are used to promote secretion by the salivary glands. For example, among the various products said to be useful for this purpose are antimony compounds, capsicum, ginger, iodine compounds, mercurials, mustard, pilocarpine hydrochloride.

"**Sicapon.**" Brand name for proprietary product. Mineralized degraded sugars.

Color and properties: Dark brown, viscous liquid with a molasses-like odor.

Constants: Sp.gr. 1.32.

Soluble in water in all proportions. Insoluble in organic solvents. Will absorb certain oils and hydrocarbon solvents if the latter are worked slowly into the same.

Containers: 1-gal. cans (10 lbs.); 5-gal. cans (50 lbs.); 55-gal. drums (600 lbs.).

Uses: Thickener for mineral oil. Suspending medium for pigments, minerals, abrasives, etc. Binder in cements and joint compounds. Temporary binder for ceramics, clays, fibers, etc.

Sicoid. See Cellon.

Siderite (Spathic iron ore) $FeCO_3$, usually with some Ca, Mg or Mn.

Gray, yellow, brown, green, white or brownish red mineral, vitreous inclining to pearly luster, white streak. Contains 62.1% FeO, 37.9% CO_2. Found in several varieties:

Spathic: Purest natural form of ferrous carbonate. Contains manganese but no phosphorus carbonate.

Clay ironstone: Less pure variety, earthy or stony mixtures with silica, clay, limonite, hematite.

Blackband: Mixtures with clay and carbon.

Spherosiderite: Secondary siderite in basalt cavities.
Constants: Sp.gr. 3.83 to 3.88; hardness 3.5 to 4.
Occurrence: United States (Vermont, Massachusetts, Connecticut, New York, North Carolina, Pennsylvania, Ohio), England, Wales, Germany, Austria, Switzerland, France.
Uses: An ore of iron; when high in manganese, used in the manufacture of spiegeleisen.

Sidero Cement. See under Cements, structural.

Sidonal (Piperazine quinate).
Color and properties: White crystalline powder.
Soluble in water.
Use: Medicine (diuretic, gout, neurasthenia, unofficial).
See also New sidonal.

Siemen's Gas.
A producer gas (q.v.).

Sienna, Burnt.
Orange-brown pigment made by carefully calcining raw sienna (q.v.).

Sienna, Raw.
A brown-tinted ferruginous, manganiferous yellow ocher. Found in the United States (Alabama, California, Pennsylvania), Cyprus, various parts of Italy.
Use: Pigment.
See also Ocher.

Signal Oil. One recommended signal oil consists of 80% mineral seal oil and 20% white fish oil.
Railroad shipping regulations: None.*

Silberol (Silver phenolsulfonate; Silver sulfophenylate; Silver sulfocarbolate) $C_6H_4(OH)SO_3Ag$.
Color and properties: Crystalline powder. Contains 28% silver. Undergoes spontaneous decomposition but more stable than itrol (q.v.). Has antiseptic properties of silver without its corrosive action.

Soluble in water.

Derivation: By the interaction of silver oxide and phenolsulfonic acids.

Use: Medicine (astringent, antiseptic, gonorrheal ophthalmia, ocular surgery, unofficial).

Railroad shipping regulations: None.*

Silex. Same as silica (q.v.).

"**Sil-Fos.**" Brand name for a proprietary product. A low-temperature, silver brazing alloy. Composition includes silver, copper and phosphorus. Silver content 15%. Said to flow freely at 1,300°F. Makes strong, ductile joints between copper, brass and bronze and other non-ferrous metals and alloys. Makes joints of high strength, high electrical and thermal conductivity. Highly resistant to corrosion of most kinds.

"**Silfrax.**" Trade-mark for bonded refractories containing from 40% to 78% silicon carbide.

Properties: High refractoriness; great strength; high thermal conductivity; freedom from spalling; resistance to clinker adhesion; and resistance to mechanical and flame abrasion.

Uses: Bricks for boiler and furnace installations; kiln furniture in ceramic kilns; shapes for boiler furnaces, air-cooled furnace linings, glass lehrs, pit furnaces, enameling furnace ware supports; pyrometer protection tubes, muffles and other small pieces with walls not exceeding three-quarters inch in thickness.

Silica. A white, or colorless, extremely hard crystalline silicon dioxide found pure as quartz (q.v.).

"**Silica Gel.**" Brand name for a proprietary product. A regenerative adsorbent, consisting chemically of practically pure SiO_2, having an enormous interior pore surface due to its ultra-microscopic porous structure which enables it through a combination of surface adsorption and capillary attraction to adsorb large quantities of liquids and vapors. It is capable of adsorbing in excess of 40% of its own weight in water and corresponding amounts of other vapors and liquids.

It is highly stable both chemically and physically and is non-deliquescent, hence no corrosive or injurious compounds are given off. Is readily reactivated by heating to temperatures of 300 to 350°F. Will stand an unlimited number of reactivations.

Grades: Commercial grades capable of withstanding temperatures up to 500/500°F. are supplied in the following mesh sizes: 3-8, 6-16, 14-20, 14-42, 28-200 and through 325. Grades to withstand higher temperatures or other screen sizes are supplied upon special request.

Containers: 1-lb., 5-lb., 10-lb., 25-lb., 100-lb., and 200-lb., air-tight metal containers.

Uses: It is used extensively as a dehumidifying and dehydrating agent and finds practical application in all types of air-conditioning and in the drying of compressed air and other gases. "Silica Gel" functions equally well in drying liquids such as refrigerants and certain types of oils containing water in solution and in suspension. It is also used as a carrier for active catalysts and in some cases as a catalyst itself.

Silicate Cotton. See Mineral wool.

Silicate of Soda. See Sodium silicate.

Siliceous Limestone. See Limestone.

Siliceous Sinter. See Opal.

Silicofluoric Acid. See Hydrofluosilicic acid.

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* *See "Transportation of Explosives," pages 23-25.*

Silicomanganese.

Alloys consisting principally of manganese, silicon and carbon. Three forms are usually marketed having approximately the following analyses:

	Per Cent (1)	(2)	(3)
Manganese	65 to 70	65 to 70	65 to 70
Silicon	20 to 25	16 to 20	16 to 20
Carbon	1.00 (max.)	2.00 (max.)	2.5 (max.)

Forms available: In crushed form or in lumps up to 75 lbs.

Uses: For making low-carbon steel in which silicon is not objectionable, silicomanganese may be used effectively for the introduction of manganese on account of its low carbon content. It is also used effectively for 13% manganese steel when large quantities of returned scrap are in the charge. Makers of low carbon-chromium and manganese steels favor it on account of the low carbon to manganese ratio.

See also manganese steels under Iron and steel (Ferrum).

Silicon Si.

Color and properties: (a) Gray, amorphous, non-metallic element, which burns in air when ignited. (b) Also obtained as hard, lustrous, crystalline leaflets which do not burn in air. Is a non-conductor of electricity.

Constants:

	(a)	(b)
Sp.gr.	2.00	2.49
M.p.		1,420°C.
B.p.		3,500°C.

Soluble in hydrofluoric acid and alkalies; insoluble in water, nitric acid and hydrochloric acid.

Derivation: (a) By heating sand with coke in an electric furnace. (b) heating sand with powdered magnesium and treating the mixture with water.

Method of purification: Treatment with hydrochloric and hydrofluoric acids.

Impurities: Iron: carbon.

Grades: Technical.

Containers. Wooden kegs.

Uses: Manufacture of silicon tetrachloride, silicon-bronze, silicon-copper and ferro-silicon; production of hydrogen

Railroad shipping regulations: None.*

Silicon Bromide (Silicon tetrabromide) $SiBr_4$.

Color and properties: Fuming, colorless liquid. Turns yellow in air. Disagreeable odor. Decomposed by water with evolution of heat.

Constants: Sp.gr. 2.82 at 0°C.; b.p. 153°C.; m.p. 5°C.

Silicon-bronze. An alloy of copper, tin and silicon used for telephone and telegraph wires.

Silicon Carbide. Carbosolite.

Silicon Chloride. See Silicon tetrachloride.

Silicon-copper (Copper silicide).

Color and properties: A hard, tough, bronze-like alloy.

Derivation: From silicon and copper electrolytically.

Grades: Technical.

Containers: Boxes.

Use: Manufacture of silicon-bronze.

Railroad shipping regulations: None.*

Silicon, Ferro-. See Ferrosilicon.

Silicon Fluoride (Silicon tetrafluoride) SiF_4.

Color and properties: Colorless gas; suffocating odor; fumes strongly in air.

Absorbed readily in large quantities by water with partial decomposition.

Derivation: (1) Action of hydrofluoric acid or concentrated sulfuric acid and a metallic fluoride on silica or silicates. (2) By strongly heating fluospar with concentrated sulfuric acid. (3) Direct synthesis.

Uses: Manufacture of fluosilicic acid; chemical analysis.

Silicon Tetrabromide. See Silicon bromide.

Silicon Tetrachloride (Silicon chloride) $SiCl_4$.

Color and properties: A clear, colorless, exceedingly mobile, fuming liquid; suffocating odor. Since it is decomposed by water to yield hydrochloric acid, it is quite corrosive to most metals when water is present with it. In the absence of water it has practically no action on iron, steel, or the common metals and alloys and can be stored and handled in metal equipment without danger.

Constants: *Pure:* Sp.gr. 1.5241 at 0°C.; b.p. 57.57°C.; m.p. —70°C.; specific heat gas 0.1319 cal./gm. (90° to 270°C.), liquid 0.19996 cal./gm. (12° to 50°C.); latent heat of vaporization 36.07 cals./gm.; latent heat of fusion 10.85 cals./gm.; heat of formation gas 142.65 Kg. cals. per gram-Formula-Weight, liquid 149.10 Kg. cals. per gram-Formula-Weight; surface tension 16.9 dynes/cm. at 18.9°C. (water = 72.75 at 20°C., 14.1 dynes/cm. at 45.5°C.); refractive index n=1.412 (C); vapor pressure log p (in mm. Mercury)= 7.6414—1572.3/T, where T=°C. absolute=°C. + 273. *Commercial:* Sp.gr. 1.480 to 1.490 at 20°/15.5°C. (68°/60°F.), 1 gal. weighs 12.38 lbs.; sp.gr. correction for temp. 0.00186 per 1°C. or 0.001003 per 1°F.; boiling range on distillation, the vapor temperature will not increase more than 1°C. (1.8°F.) between first drop and complete vaporization of the liquid sample; suitable precautions must be observed during the distillation test to prevent superheating of vapors; the boiling range will include the b.p. of pure $SiCl_4$ at the prevailing barometric pressure, b.p. correction for barometric pressure is 0.0373°C. per mm. mercury; analysis free chlorine not more than 0.01%, titanium tetra not more than 0.10%, silicon tetra not less than 99.50%.

Miscible in all proportions with carbon tetrachloride, tin tetrachloride, titanium tetrachloride and sulfur mono- and di-chlorides. Decomposed by water.

Derivation: Silicon carbide is packed around a resistor and electrically heated, whereupon chlorine is passed through the mass and the silicon tetrachloride condensed from the escaping gas.

Impurities: Silicon hexachloride.

Grades: Technical.

Containers: Iron drums; bottles.

Uses: Smoke screens in warfare; raw material in making ethyl silicate and similar compounds which result from the reaction between anhydrous alcohols and silicon tetrachloride; suggested as a concentrated form of hydrochloric acid which can be shipped in steel drums (when decomposed with water or steam it yields about 84% of its own weight in equivalent anhydrous hydrochloric acid).

Railroad shipping regulations: White label.

Silicon Tetrafluoride. See Silicon fluoride.

Silicotungstic Acid (Silicowolframic acid) $4H_2SiO_2.12WO_3.22H_2O$.

Color and properties: White to yellowish-white crystals.

Soluble in water and alcohol.

Derivation: By heating ammonium silicotungstate with aqua regia.

Method of purification: Crystallization.

Grades: Technical; C.P.

Containers: Kegs; glass bottles.

Uses: Chemical reagent for alkaloids; mordant for basic dyes.

Railroad shipping regulations: None.*

Silicowolframic Acid. See Silicotungstic acid.

Silk, Artificial. See Rayon.

"Silkool" Fiber. A Japanese synthetic fiber said to be made from soybean meal.

Sillimanite (Fibrolite) $Al(AlO)SiO_4$. The mineral.

A natural silicate of aluminum corresponding to the

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* *See "Transportation of Explosives," pages 23-25.*

Filed Jun 16 1952 Harry M. Hull, Clerk

NEW WRINKLE INC. ET AL v. MARZALL,

Civil Action 2964-49

A—Root	1,883,408
B—Root	1,950,417
C—Waldie	2,392,346
D—Examiner's Statement	
E—Decision by Board	

Filed Jun 16 1952 Harry M. Hull, Clerk

Div. 64 Room 7600 Paper No. 10

Paper No. 10 Mailed Oct 11 1948

DEPARTMENT OF COMMERCE

UNITED STATES PATENT OFFICE
Washington 25, D. C.

In re application of William A. Waldie, Ser. No. 653,932

Filed: March 12, 1946 For: WRINKLE CATALYST

BEFORE THE BOARD OF APPEALS
ON APPEAL NO. 16,418

Examiner's Statement

This is an appeal from the rejection of claims 1 to 11 (all of the claims in the case).

1. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising from 2 to 3 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the

group consisting of manganese borate, cobalt acetate and lead oxides.

2. A dry texture modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent selected from the group consisting of bentonite and silica gel.

3. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising 2 parts by weight of maleic acid anhydride and 1 part by weight of manganese borate.

4. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkle coating compositions comprising an oil reactant and a texture producer in the proportion of from 1 to 4 parts by weight of oil reactant selected from the group consisting of maleic acid, maleic acid anhydride, and fumaric acid per one part of texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

5. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder comprising 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

6. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder comprising from 1 to 4

parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides, and a dehydrating agent.

7. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil and a texture modifying powder consisting of from 1 to 4 parts by weight of maleic acid anhydride per 1 part by weight of manganese borate.

8. In a method of producing oil compositions that dry to wrinkle-textured films the steps of heating non-conjugated double-bonded oil to a temperature of from 350° F. to 420° F. and adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

9. A wrinkle varnish composition comprising a non-wrinkling varnish base and a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected from the group consisting of manganese borate, cobalt acetate and lead oxides.

10. In a process of converting a non-wrinkle varnish composition to a wrinkling coating composition comprising the steps of heating the non-wrinkling varnish composition to a temperature of from 350° F. to 420° F., adding a texture modifying powder comprising from 1 to 4 parts by weight of an oil reactant selected from the group consisting of maleic acid, maleic acid anhydride and fumaric acid, and 1 part by weight of a texture producer selected

from the group consisting of manganese borate, cobalt acetate and lead oxides, and heating the mixture to a temperature of from 570° F. to 620° F. for a time of approximately 30 minutes.

11. In a process of converting a non-wrinkle varnish composition to a wrinkle coating composition comprising the steps of heating a resin-oil dispersion to a temperature of approximately 350° F., adding 0.5 to 2.5%, with regard to the varnish, of a texture modifying powder consisting of 2 parts of maleic acid anhydride and 1 part of manganese borate to the dispersion, then heating it to a temperature of from 590° F. to 600° F. for a time of from 30 to 40 minutes, allowing the mixture to cool to 400° F. to 350° F., and then adding thinner and drier.
References relied on are:

Waldie	2,392,346	Jan. 8, 1946
Root	1,950,417	Mar. 13, 1934
Root	1,883,408	Oct. 18, 1932

The Subject Matter

The subject matter of the application relates to a dry powder mixture which, upon addition to a non-wrinkling coating composition, will convert such a composition to a coating composition having wrinkling properties. The dry powder mix comprises a drier selected from the group consisting of manganese borate, cobalt acetate, and lead oxide and a polycarboxylic acidic substance selected from the group consisting of maleic acid, fumaric acid and maleic acid anhydride.

The References

Waldie discloses a process for the production of wrinkling compositions, based upon an oil such as linseed oil, which comprises heating an oil and a resin to a temperature of approximately 400° F, adding to the oleoresinous composition a polycarboxylic acid or its anhydride, and continuing the heating at a temperature of about 550° F. Subsequently solvent and driers are added.

Both patents to Root disclose wrinkle coating compositions comprising an oil, a resin and a solvent and including a substance of the type referred to by applicant as a "texture producer." The particular driers recited by applicant are disclosed by Root in his patents. Patent 1,950,417 shows the use of raw linseed oil as a component of wrinkle finish compositions.

The Rejection

Claim 1 defines a dry powder mixture consisting of a drier from the recited group of driers and a polycarboxylic acid or anhydride from the recited group of such substance in the proportions of 2 to 3 parts of acidic substance to 1 part of drier.

Claim 2 differs from claim 1 in the recitation of a broader range of proportions in which the acidic substance is present, and in the inclusion of either bentonite or silica gel as a dehydrating agent.

Claim 3 is specific to manganese borate as the drier and to maleic acid anhydride in the proportions of 1 part by weight of drier to 2 parts by weight of anhydride.

Claim 4 differs from claim 2 only in the omission of the dehydrating agent.

Claim 5 defines a wrinkle finish oil composition comprising a non-conjugated double-bonded oil and the dry powder mixture of claim 4.

Claim 6 defines a similar composition but having a dehydrating agent present in the dry powder.

Claim 7 is specific to the use of maleic acid anhydride and manganese borate as the components of the dry powder mixture.

Claim 8 defines a method for producing wrinkle finish oil compositions which comprises heating a non-conjugated double-bonded oil to 350°-420° F. and then adding the dry powder mixture of claim 4.

Claim 9 defines a wrinkle varnish composition comprising a non-wrinkling varnish, one based on a non-conjugated double-bonded oil, and the dry powder mixture of claim 4.

Claim 10 defines a process for converting a non-wrinkling varnish to a wrinkle finish varnish which comprises adding to the heated varnish composition, at 350-420° F., a dry powder mixture as recited in claim 4, and heating the mixture to a temperature of 570°-620° F.

Claim 11 defines a similar process in which the relative proportion of dry powder mixture added to the varnish is set forth, and in which the specific powder mixture of claim 3 is used.

Claims 5-8 are rejected as too broad in the recitation of the addition of the dry powder mixture to oils per se. None of the examples set forth in the specification show the addition of the powder to an oil alone. Applicant has argued that Example V showed the addition of a dry powder mix to the oil per se. It is pointed out that the final composition obtained in this example is a varnish, resin being added after the powder, and that it is in this final varnish composition that the dry powder mixture exercises its effect rather than in the substance to which it is added.

All of the claims are rejected as aggregative. There is no evidence to show that the components of the dry powder mixture cooperate to produce any effect other than the effects of the individual components exercising their separate functions in the dry powder mixture. Both the polycarboxylic acid substance and the drier are known for use in the production of wrinkle finishes. Waldie clearly discloses the addition of maleic anhydride, or other polycarboxylic acids or anhydrides, to a varnish based on a non-conjugated double-bonded oil, and the resultant formation of a wrinkle finish composition. Root, Patent 1,950,417 on page 3, column 1, at lines 47-56, attests to the effect of driers, including those recited by applicant; in producing a wrinkled finish. Since each element of the combination is thus seen to be old as an agent for producing wrinkling finishes and since no cooperative effect has been shown to result from their admixture it is considered that claims 5-8 are properly rejected on the grounds of aggregation.

Claims 1-11, all of the claims in the case, are rejected as unpatentable over Waldie in view of the patents to Root. Waldie has disclosed a process which comprises heating a resin and an oil to about 400° F., adding maleic anhydride to the oleoresinous composition at the elevated temperature, carrying the temperature to about 550° F., and, after cooling to about 400° F., adding a drier thereto. Both Root patents disclose the particular driers recited by applicant for use in the production of wrinkling finishes. Patent 1,950,417 discloses the specific drier of claims 3, 7 and 11, manganese borate, and teaches that it is an important element in wrinkling compositions, effecting the rate of oxidation of the wrinkling oil and speeding up the wrinkling. No invention is seen in the use of the specific driers disclosed by Root in lieu of the driers used by Waldie, nor is the addition of the polycarboxylic acid substance together with the drier to a prepared varnish rather than making up the entire composition as disclosed by Waldie. Further, it would not involve invention to add a polycarboxylic acid substance to the wrinkling varnish composition disclosed by Root in view of the teaching by Waldie of the effect of polycarboxylic acids or their anhydrides on varnishes based on non-conjugated double-bonded oils. Root 1,950,417 on page 2, column 1, at lines 13-16 specifically discloses raw linseed oil as a drying oil suitable for use in wrinkling compositions.

Applicant has argued that Waldie is not pertinent since Waldie adds the polycarboxylic acid for the purpose of modifying his alkyd resin. It is pointed out, page 2, column 1, lines 56 and 57, that the resin used by Waldie may be an already maleic acid modified alkyd resin. Waldie further states that he may use natural resins, page 2, column 1, lines 63-65. The stated purpose of the invention in the Waldie patent is to produce wrinkling compositions from linseed oil, a non-conjugated double-bonded oil. Attention is further directed to Example VI of the instant application and to Examples II and III of the Waldie patent, all of which disclose the preparation of a wrinkle finish composition by dispersing Amberol F-7, a rosin modified phenol-formaldehyde resin, in a non-wrinkling oil and adding a polycarboxylic acid substance and cobalt driers thereto. For the above reasons it is considered that applicant's arguments are not sufficient to overcome the Waldie reference. The facts do not support applicant's contention that Waldie, in his patent, adds maleic acid only for the purpose of modifying his alkyd resin.

Applicant argues that Root 1,950,417 is not pertinent since the compositions to which Root adds the driers are wrinkling oil-containing compositions. But among the oils which Root discloses as wrinkling oils is raw linseed oil, the specific oil with which applicant is chiefly concerned in the instant application. Therefore the addition of such driers as manganese borate to linseed-oil-containing compositions is within the scope of the invention disclosed by Root in Patent 1,950,417. Applicant further argues that the cited portion of Patent 1,950,417, namely page 2, column 1, lines 13-16 cannot be construed by itself as teaching the use of raw linseed oil. No necessity is seen for construing the clear and unambiguous statement made there by Root. If necessary, reference may be had to the entire paragraph, page 2, column 1, lines 8-47, for a more complete exposition of the inclusion of raw linseed oil in the generic class of wrinkling oils. For the foregoing reasons it is considered that Root adequately discloses the addition of a drier, such as manganese borate, to a linseed oil composition together with the resultant effect of the drier in producing a wrinkle finish.

In conclusion it is submitted that the rejection of claims 1-11 is sound and should be sustained.

Examiner

BWB:bs
Messrs. Toulmin & Toulmin
Toulmin Building
Dayton, Ohio

Filed Jun 16 1952 Harry M. Hull, Clerk

Paper No. 13

U. S. PATENT OFFICE
Board of Appeals
Jun 30 1949 Mailed
Appeal No. 16418
Hearing: June 15, 1949

IN THE UNITED STATES PATENT OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte William A. Waldie

Applilcation for Patent filed March 12, 1946, Serial No. 653,932. Wrinkle Catalyst.

Messrs. Toulmin & Toulmin for appellant.

This is an appeal from the action of the Examiner finally rejecting claims 1 to 11, inclusive, all of the claims in the application.

Claims 3, 7 and 11 are reproduced as best describing the subject matter on appeal:

3. A dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkling coating compositions comprising 2 parts by weight of maleic acid anhydride and 1 part by weight of manganese borate.

7. An oil composition which dries to a wrinkle-textured film comprising a non-conjugated double-bonded oil

and a texture modifying powder consisting of from 1 to 4 parts by weight of maleic acid anhydride per 1 part by weight of manganese borate.

11. In a process of converting a non-wrinkle varnish composition to a wrinkle coating composition comprising the steps of heating a resin-oil dispersion to a temperature of approximately 350°F., adding 0.5 to 2.5%, with regard to the varnish, of a texture modifying powder consisting of 2 parts of maleic acid anhydride and 1 part of manganese borate to the dispersion, then heating it to a temperature of from 590°F. to 600°F. for a time of from 30 to 40 minutes, allowing the mixture to cool to 400°F. to 350°F., and then adding thinner and drier.

The references relied on are:

Root	1,883,408	Oct. 18, 1932
Root	1,950,417	Mar. 13, 1934
Waldie	2,392,346	Jan. 8, 1946

This application describes a coating composition capable of drying to produce a wrinkle finish surface. Appealed claims 1 to 4, inclusive, relate to a mixture used to impart wrinkle characteristics to otherwise non-wrinkling coating compositions. Claims 5, 6, 7 and 9 relate to the wrinkle producing varnish composition and claims 8, 10 and 11 relate to the process of compounding the wrinkle finish varnish. We have reproduced above the most specific form of claim in each of the three categories.

All of the claims have been rejected as unpatentable over Waldie in view of the patents to Root. Waldie describes and claims wrinkle finish coating compositions and methods of compounding such compositions. The procedure described by Waldie in connection with Example 1 differs from that specified in claim 11, quoted above, only in the inclusion of manganese borate with the maleic anhydride as a so-called "texture modifying powder."

The patentee suggests the addition of a drier during the cooling period after heating the other components together. Manganese borate is a conventional drier which, as shown by Root, may be used in wrinkle finish compositions. See Root No. 1,883,408, page 3, lines 55 to 63.

Appellant asserts that Waldie does not disclose a mixture of maleic anhydride and manganese borate and does not disclose the addition of these two components together prior to bodying the oil by heat. Appellant asserts that the general practice of the prior art in preparing wrinkle finish varnishes is to use a boiled or blown oil and to add the driers only after the remaining components have been properly combined.

There has been considerable argument as to whether the reference by Root to raw linseed oil refers to the use of such oil as the principal oil component of a wrinkle finish varnish. We do not believe that the question is pertinent to the claims in consideration since such claims are not limited to the use of raw linseed oil and, furthermore, the heating to a temperature of 590 to 600°F. prevents any assertion that "raw oil" is still present in the finished composition. While there are assertions in the brief to the effect that the present expedient of mixing maleic amide and manganese borate prior to compounding these components in the varnish gives better results, we find no evidence supporting that assertion.

The present claim 11 differs from Waldie only in the addition of a part of a conventional drier such as manganese borate with the maleic anhydride prior to the cooking operation at 590 to 600°F. Since there is no evidence that this particular change in the order of heating the ingredients, or the selection of manganese borate for that purpose, is of material advantage, we agree with the Examiner that no invention is involved. We note Webster's New International Dictionary, 2nd Ed. Unabridged, 1941, under the heading "boiled oil" describes this material:

"an oil whose drylng properties have been increased by heating, usually with driers, as lead and manganese oxides or salts."

It thus appears to be common practice to incorporate driers to boiled oils. We find no error in the Examiner's action in refusing all of the claims as unpatentable over Waldie in view of the Root patents.

Claims 5 to 8, inclusive, have also been refused as too broad by reason of the failure to include resins in the composition. We are of the opinion that the specification sufficiently suggests the addition of the powder mixture to oils to defeat this rejection.

All of the claims were further rejected as aggregative. We cannot see how that rejection can be applied to method claims 8, 10 and 11. These claims define a series of steps adapted to produce a varnish composition and, in the absence of art, would properly define the subject matter. We are of the opinion that the charge of aggregation cannot be sustained as to claims 8, 10 and 11.

Claims 5, 6, 7 and 9 each describe a complete varnish composition, and while the various components thereof may each independently contribute its qualilties or functions, we do not think that this objection is sufficient to sustain a rejection for aggregation, as to these claims.

Claims 1, 2, 3 and 4 are directed to a dry powder mixture of maleic acid and manganese borate or other drier. These components do not react with each other. The mixture apparently possesses no utility in itself and is at best merely a convenient mixture used in compounding the wrinkle finish varnishes. Nothing of record justifies a conclusion that the two components possess any cooperative relationship to each other. A claim to a mere mixture of non-reactive, uncooperative components of this character is believed to be properly rejectable as an aggregation.

The decision of the Examiner is affirmed.

In event of appeal attention is directed to *In re* Boyce, 32 C.C.P.A. 718; 144 Fed. (2nd) 896; 1944 C.D. 609; 568 O.G. 568; 63 U.S.P.Q. 80 in regard to specifically including in the appeal notice *all* grounds of rejection in the Examiner's statement not expressly overruled by the Board.

/s/ S. A. Wolff
Examiner-in-Chief

/s/ E. W. Geniesse
Examiner-in-Chief

/s/ Illegible Signature
Examiner-in-Chief
(Acting)
Board of Appeals

June 30, 1949

Messrs. Toulmin & Toulmin,
Toulmin Building,
Dayton, Ohio.

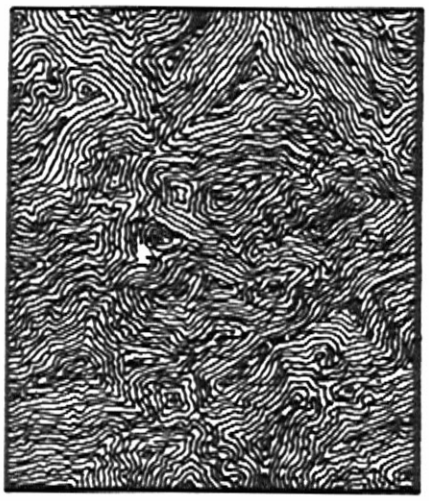
175 A

Oct. 18, 1932. F. B. ROOT 1,883,408

WRINKLE FINISH COATING

Filed March 1, 1929

Fig. 1.



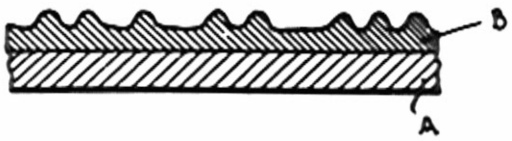


Fig. 2.

Inventor

FRANK B. ROOT.

By Frederick S. Duncan

Attorney

Patented Oct. 18, 1932 **1,883,408**

UNITED STATES PATENT OFFICE

FRANK BRIAN ROOT, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO CHADELOID CHEMICAL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA

WRINKLE FINISH COATING

Application filed March 1, 1929. Serial No. 343,727.

This invention relates to varnishes and enamels and methods of utilizing such compositions and particularly to compositions of this character which result in the production of the so-called wrinkled finishes.

In U. S. Patent No. 1,689,892, to Frank B. Root granted October 30, 1928, there was disclosed for the first time in the art the production of wrinkling finishes and compositions to be used therefor together with processes of producing articles carrying such finishes. This patent represents a very wide departure from the prior art since it taught the art as stated for the first time how the finish of such compositions could be controlled to produce desirable and ornamental wrinkle finishes. Prior to this patent, the attempt in the art in connection with continuous coatings has always been to produce a relatively smooth coating. Where undesirable irregularities of finish appeared in the prior art, attempts were always made to eliminate such undesirable factors. However, under the disclosure of the Root patent refered to, the wrinkling finish was controlled for the first time so that it might be used as a basis for highly ornamental coatings on articles of manufacture.

For such purposes that patent teaches that drying oils are an essential characteristic of the wrinkling finish varnishes. Among the drying oils mentioned in that patent and suggested for these purposes are blown linseed oil, raw linseed oil, perilla oil, China wood oil, blown China wood oil, and partially oxidized or pre-oxidized China wood oil.

As explained in that patent when the surface is coated with a varnish of the desired composition and exposed to drying conditions advantageously at an elevated temperature, a wrinkle finish of pleasing and attractive appearance results. The wrinkling seems to be due to rapid oxidation of the surface of the applied film forming a skin over the less oxidized material on the interior of the film, the surface skin increasing in volume and expanding laterally and the less oxidized material on the interior of the film being of lower viscosity, flowing into the fold produced by expansion of the surface skin. The general effect is that of the level surface carrying ridges projecting therefrom and running more or less irregularly over the surface, the film however being continuous.

The prior patent explains that an important characteristic of the oil used is the speed with which it oxidizes. That patent specifically discloses in detail the utilization of China wood oil, particularly the blown or partially oxidized or pre-oxidized China wood oil.

One of the objects of the present invention is the production of compositions in the nature of varnishes or enamels which result in the production of wrinkle finishes, such compositions containing drying oils which do not oxidize as readily as China wood oil.

Other and further objects and advantages will appear from the more detailed description set forth below, it being understood however that this more detailed description is given by way of illustration only and not by way of limitation since various changes may be made therein by those skilled in the art without departing from the scope and spirit of the present invention.

In connection with that more detailed description there is shown in the accompanying drawing in

Figure 1 a plan view of a panel carrying the wrinkle finish of the present invention; and in

Figure 2 a cross section of such panel A carrying the wrinkle finish B enlarged to show the wrinkles or rugosities of the surface.

For producing the desired effect, compositions are chosen which under proper drying or baking conditions give the particular effect denominated as wrinkle finish. An important component of such compositions is a drying oil. An investigation of the various drying oils that are available shows that the conditions under which these drying oils give the best results varies with the particular drying oil being utilized. For example while excellent results may be obtained with raw China wood oil or with blown China wood oil, the best effects with perilla and linseed oil are obtained when these oils are used either in the form known as blown or oxidized oils. While the present application is therefore particularly concerned with the utilization of blown and boiled perilla and linseed oil in the production of wrinkle finishes, other less common drying oils that may be mentioned and may be similarly utilized include chia, Oiticica, walnut, poppy-seed, sunflower, candle nut, lumbang, hempseed, fish, etc. The oils which may be used in the production of wrinkle finishes may be generically referred to as "wrinkling oils" to distinguish them from the large class of non-wrinkling oils including primarily the semi-drying and non-drying oils. In referring to the wrinkling oils with which the present invention is particularly concerned, such oils will be generically referred to in the description of the invention as oils of the perilla-linseed type.

The production of the best results with wrinkling oils of the perilla-linseed type differentiate themselves from China wood oil in several particulars. For example comparisons of four oils, namely blown China wood oil, untreated China wood oil, blown perilla oil and blown linseed oil, show that the relative activity of these wrinkling oils in wrinkling finishes may be expressed in a series as follows: Blown China wood oil 5; raw China wood oil 6½; blown perilla oil 8; and blown linseed oil 12. This series expresses the fact that the oils bearing the lowest numbers are the more powerful in their wrinkling tendencies and consequently the order of the oils given above represents the wrinkling power of these oils in the specified compositions, blown China wood oil being the most powerful of the oils mentioned.

Further comparison of the several oils in relation to the resin content when such resin is of the wrinkling finish type to be further defined below shows that for the production of the best results with such oil-resin compositions there is a difference in oil-resin ratios depending on the type of oil used. For example with blown China wood oil the best appearance of the finish is obtained when the ratio of oil to resin is approximately from 6 to 18 gallons of oil to 100 lbs. of resin. For untreated China wood oil the ratio is approximately from 8 to 25 gallons of untreated China wood oil to 100 lbs. of resin. For blown perilla oils the best ratios are from 10 to 30 gallons of oil to 100 lbs. of resin while for blown linseed oil the best ratios are from 14 to 35 gallons of blown linseed oil to 100 lbs. of resin. These oil-resin ratios also illustrate a difference between the action of the oil in the wrinkling finish composition.

A further factor which illustrates differences between the several wrinkling oils is in connection with the drying and baking operation. Other factors being the same except for variations in the composition in the character of oil used, show that in the production of the best effects in compositions utilizing wood oil (untreated) the time is approximately ten per cent more than when blown China wood oil is used, while for blown perilla and blown linseed oil the baking temperature should be from 20 to 25 per cent more than that used with blown China wood oil compositions. Unless otherwise indicated below in further defining the present invention, it will be understood that when blown perilla and blown linseed oils and other blown oils of the perilla-linseed type are referred to, these also include oxidized oils and similar products although they may not be specifically mentioned at the particular point under consideration.

While specific drying oils are mentioned above it is understood of course that mixtures of the various drying oils particularly in their blown or oxidized condition may be utilized in the production of satisfactory wrinkle finishes, the range of proportions when mixtures of such oils are used being the arithmatical average of the ranges of the oils when used alone. And while a varnish or other composition to be used to produce a wrinkle finish must contain a substantial proportion of a wrinkling oil, admixtures of the non-wrinkling oils may be used so long as the amount of the latter is not sufficient to eliminate the desired wrinkle effect in the finish obtained.

In general it may be stated that in such admixtures for the best effects, not less than half of the oil mixture should be a wrinkling oil. For example two or more wrinkling oils and two or more non-wrinkling oils may be mixed and a varnish produced therefrom with the addition of the resins, driers and thinners. In such case the sum of the amounts of all the wrinkling oils should desirably be at least one-half of the total oil mixture. Among the non-wrinkling oils there may be mentioned specifically soya bean oil, and other semi- and non-drying oils such as cotton seed, corn, castor, rape-seed, rubber-seed, olein, etc. Such non-wrinkling oils may be either the raw oils or the blown or otherwise treated oils.

Of the resins usable in the production of wrinkle finishes, which resins may be denominated wrinkling finish resins, the following may be noted: Congo, kauri, damar, Cumar, Pontianak, manila, Zanzibar, elemi, mastic, phenol-formaldehyde resins particularly of the oil soluble variety, glycerol-phthalic condensation products particularly of the oil soluble variety, paracoumarone, Congo ester, rosin ester, and mixtures of these resins and resin esters.

Certain substances exhibit a tendency to inhibit the wrinkling effect. Among such substances there may be mentioned pyroxylin, nitrocellulose, gilsonite, and rosin. These wrinkle inhibiting substances should therefore not be used in any proportions in the composition which would prevent the desired development of wrinkles in the finish. Such wrinkle inhibiting substances when used in small amounts have a tendency to produce very fine wrinkles while in the large amounts they may completely eliminate the wrinkling effect. Rosin if used in large amount, also tends to produce irregularities in the size and in the interval between wrinkles in the resulting finish.

Solvents or thinners are not a main factor since any moderately volatile solvent can be used. Preferably the major portion of the solvent or thinner should distil below about 325° F. The thinner used may be a mixture of several thinning components. The low boiling thinner evaporates more quickly from the varnish or enamel film, promotes the rapid formation of a surface skin, and during drying assists in maintaining a greater differential between the degree of oxidation of the surface skin and the oil within the film. When the finish is dried at elevated temperatures, the use of low boiling thinners also assists in eliminating any tendency toward sagging of the finish during the drying operation.

The following are illustrative of the thinners and solvents that may be used: light naptha, toluol, benzol, petroleum ether or ligroin (benzine), acetone, carbon tetrachloride, alcohol, chloroform, ethyl acetate, etc., and mixtures of these. To some extent, the character of the finish may be varied by the quantity and character of the thinner used. Turpentine and other high-boiling thinners may also be used. More pronounced wrinkles are produced with compositions containing the lower boiling thinners.

Driers and drier combinations are also an important element in the composition since the wrinkled effect appears to be somewhat determined by the rate of oxidation of the wrinkling oil. Such driers as cobalt acetate, red lead, manganese borate, lead linoleate, etc., used alone or in admixture with each other or with other driers are illustrative.

A number of examples of compositions that may be utilized in the production of wrinkle finishes in accordance with the present disclosure are set forth below.

Example 1

Congo	100 lbs.
Red lead	2½ lbs.
Manganese borate	1¼ lbs.
Blown linseed oil	15 gals.
Turpentine	5 gals.
Toluol	19 gals.

This example illustrates a fifteen gallon blown linseed varnish. The finish obtained is quite even and shows well defined wrinkles.

Example 2

Congo	100 lbs.
Lead linoleate	4½ lbs.
Manganese borate	¾ lb.
Cobalt acetate	½ lb.
Blown perilla oil	10 gals.
Light naphtha	5 gals.
Toluol	15 gals.

This is a ten gallon blown perilla varnish that gives fairly uniform results when the film is set.

Example 3

Kauri	100 lbs.
Rosin	4 lbs.
Lead linoleate	10 lbs.
Manganese borate	1½ lbs.
Cobalt acetate	1¼ lbs.
China wood oil	2½ gals.
Blown perilla oil	22½ gals.
Light naphtha	5 gals.
Toluol	22 gals.

This example illustrates the use of a varnish containing China wood oil together with a relatively large quantity of blown perilla oil. It yields uniform wrinkles that are quite close together and the wrinkles are quite fine in texture.

Example 4

Congo	50 lbs.
Kauri	50 lbs.
Rosin	5 lbs.
Red lead	3 lbs.
Manganese borate	1¼ lbs.
Cobalt acetate	3¼ lbs.
China wood oil	2½ gals.
Blown wood oil	3¼ gals.
Blown perilla oil	3¾ gals.
Light naptha	5 gals.
Toluol	17 gals.

The mixture of oils given in this example illustrates the use of a number of wrinkling oils and the wrinkling effect obtained is very good.

In Example 4 the blown perilla oil may be substituted by boiled perilla oil. The wrinkling obtained is also quite satisfactory in the latter case, the wrinkles however being a little coarser than in example when blown perilla oil is used. As a matter of fact it appears to be a general rule that when part of the wrinkling oils in a mixture is replaced by a non-wrinking oil, the wrinkles that are formed in the film upon baking are slightly coarser than is obtained when all the oils are of the wrinkling type.

Example 5

Congo	100 lbs.
Litharge	3 lbs.
Manganese borate	1 lb.
Blown linseed oil	7½ gal.
Blown parilla oil	6¼ gal.
Turpentine	2½ gal.
Light naphtha	2½ gal.
Toluol	20 gal.

This example illustrates a wrinkling varnish containing both blown perilla and blown linseed oils. The wrinkling effect is satisfactory.

Example 6

Amberol	100 lbs.
Lead linoleate	5 lbs.
Cobalt acetate	1 lb.
Blown linseed oil	18 gal.
Blown soya bean oil	5 gal.
Toluol	22 gal.

This varnish illustrates the use of blown linseed oil in admixture with a lesser amount of a non-wrinkling oil such as blown soya bean oil. Well defined wrinkling which is fairly coarse is obtained with this composition. The resin used in this case is of the oil-soluble phenol-formaldehyde type.

Example 7

Cumar	100 lbs.
Lead linoleate	4 lbs.
Cobalt acetate	1 lb.
Blown perilla oil	12 gal.
Blown wood oil	4 gal.
Blown soya bean oil	4 gal.
Light naphtha	8 gal.
Toluol	16 gal.

The wrinkling oils of this example are a mixture of blown perilla and blown wood oils, there being present a non-wrinkling oil, namely, blown soya bean oil. The wrinkling effect is quite pronounced.

Example 8

Congo	100 lbs.
Red lead	2 lbs.
Manganese borate	¾ lb.
Cobalt linoleate	1¼ lbs.
Wood oil	1¼ gal.
Blown wood oil	6 gal.
Blown linseed oil	3 gal.
Blown parilla oil	2½ gal.
Blown soya bean oil	2½ gal.
Light naphtha	4 gal.
Toluol	17 gal.

This varnish contains a mixture of various wrinkling oils and a small amount of the non-wrinkling oil, blown soya bean oil. Upon baking very pronounced wrinkles are produced.

Example 9

Kauri	100 lbs.
Red lead	2 lbs.
Manganese borate	1 lb.
Cobalt acetate	½ lb.
Blown parilla oil	10 gal.
Blown linseed oil	10 gal.
Blown soya bean oil	3 gal.
Xylol	22 gal.

Example 9 illustrates a varnish containing a mixture of equal amounts of blown perilla oil and blown linseed oil, together with a small amount of a non-wrinkling oil. The wrinkling is fairly coarse.

Example 10

Congo	100 lbs.
Rosin	4 lbs.
Red lead	2 lbs.
Manganese borate	1 lb.
China wood oil	2 gals.
Blown wood oil	5 gals.
Blown linseed oil	2 gals.
Light naphtha	20 gals.
Toluol	5 gals.

This varnish illustrates a mixture of wrinkling oils with blown wood oil predominating. The wrinkling effect is very good. The varnish of Example 10 may be modified by substituting boiled linseed oil for the blown linseed oil specified therein. The wrinkling effect obtained with the modified composition is satisfactory but the wrinkles are somewhat coarser than result when the composition of Example 10 is used.

In producing the improved wrinkled finish of this invention, it is advantageous to dry or bake the applied finish of varnish or enamel, preferably at an elevated temperature depending on the type of article being treated. For metal and related surfaces a temperature of 150° F. up to approximately 450° F. may be advantageously used. For wood and similar materials somewhat lower temperature such as 120° F. up to 140° F. may be utilized. At elevated temperatures rapid oxidation of the surface of the applied film is promoted and any tendency toward diffusion of oxidation products from the surface into the interior of the film is lessened. In general, drying at elevated temperatures accentuates the wrinkling and assists in providing a harder finish.

As an illustration of the relation between the drying times and temperatures of drying or baking to produce satisfactory wrinkle finishes the following are given. With compositions that give satisfactory effects by five-hour treatment at 180° F. similar treatment for three hours at 200° F., or two hours at

250° F. or one and one-half hours at 300° F. and approximately three-fourths of an hour at 400° F., may be used. As stated above, the wrinkling finish composition containing wrinkling oils of the perilla-linseed type require from 20 to 25 per cent longer heat treatment at the same temperature as do similar compositions utilizing blown wood oil. Drying at elevated temperatures also assists in making this finish resistant to the action of the usual solvents employed in pyroxylin enamels and lacquers.

Increase in the amount of oil in the compositions result in wrinkling at lower temperatures and hence when the lower temperatures are to be used in connection with wood and related articles, the compositions may desirably contain more oil. Further the higher oil content gives added flexibility so that the long oil compositions are desirable for use in metal stamping, or on leather, paper, cloth, rubber, etc.

There have been set forth above a number of considerations directed to the types of compositions and the baking temperatures which effect the character of the wrinkles produced in the finish. Other factors however are also found which affect the character of the wrinkles produced. For example the thickness of the applied film will result in differences in the finish. Thinner films give finer wrinkles and thicker films coarser wrinkles. When spraying is used, spray nozzles giving coarse atomization give greater deposition of composition and consequently coarser wrinkles, while on the other hand spray nozzles of finer atomization give thinner films with finer wrinkles.

For the production of wrinkle finishes having a textured effect by the production of accentuated rugosities at certain points or areas in the finish the article to be treated may desirably be coated with a relatively heavy coating of the desired composition and baked in an inclined position which inclined position may vary from a small angle to the horizontal to a vertical position. The incline of the surface of the article bearing the coating produces a flowing or movement of the wrinkle coating after it is applied and at or about the time when the baking commences and before the baking has caused the setting of the finish to take place to a point where such movement or flowing would be prevented. The effect of such treatment is to produce waves or areas of accentuated rugosities or wrinkles in the more regularly wrinkled finish.

The flowing or movement of the wrinkle coating after it is applied which results in the accentuated rugosites set forth above may be accomplished in other ways than merely by gravity due to the position of the work. For example air currents or other flowing methods may be used.

When gang sprays are used to apply the composition, at certain points the atomization may be made coarser to produce heavier or thicker layers at these points resulting in coarser wrinkles in such thicker layers. Accentuated rugosities distributed in the more uniformly wrinkled finishes may be produced in this manner.

The wrinkle finishes are characterized by an exceedingly important property, namely their remarkable hiding quality. This term "hiding quality" is used in more or less the same meaning that the expression "covering power" is used in the paint art. It is a remarkable thing for example that a single coat of unpigmented wrinkle finish may be applied to a bright metal surface and the resulting finish will completely mask the metal surface. Other pigmented compositions generally require at least several coats in order to secure a comparable hiding effect.

The baked or dried finishes of the present invention are particularly resistant to softening by lacquer compositions and particularly the solvents used in nitrocellulose lacquers, so that although the rugose surface of the wrinkle finish affords a very extensive area for the action of such solvents or lacquers the baking creates a resistance to such softening action.

Consequently the wrinkle finishes and composition used for producing such coatings are particularly desirable as under coats where a wrinkle finish is desired and such finishes may then be given one or more coats of pyroxylin enamels, oil enamels, or baking japans. When pigments are used in the wrinkle finish which have a tendency to change or to darken under the action of elevated temperatures, these finishes may be coated with pyroxylin lacquer compositions.

While certain theoretical considerations have been set forth above in an attempt to explain some of the effects obtained, it should be understood that this invention is not limited by such theoretical considerations because the compositions and methods discussed above do result in the particular effects set forth and it is immaterial what may be the actual cause of such effects. Pronounced effects of the character herein set forth are readily obtained with the compositions and methods outlined above.

Having set forth my invention, I claim:

1. A coating composition comprising a wrinkling oil selected from the group consisting of perilla and linseed oils, a wrinkle finish resin, a drier and thinner in proportions to yield a wrinkle finish when dried.

2. A composition as set forth in claim 1 in which the wrinkling oil is blown perilla oil.

3. A composition as set forth in claim 1 in which the wrinkling oil is blown linseed oil.

4. A coating composition comprising a

wrinkling oil containing a mixture of blown perilla and blown linseed oil, a wrinkle finish resin, a drier and thinner in proportions to yield a wrinkle finish when dried.

5. A coating composition comprising a wrinkling oil selected from the group consisting of perilla and linseed oils, a non-wrinkling oil, a wrinkle finish resin, a drier and thinner in proportions to yield a wrinkle finish when baked.

6. A coating composition comprising blown linseed oil, a wrinkle finish resin, a drier and thinner the ratio of oil to resin being from 14 to 35 gals. of oil to 100 pounds of resin.

7. A coating composition comprising blown perilla oil, a wrinkle finish resin, a drier and thinner, the ratio of oil to resin being from 10 to 30 gals. of oil to 100 pounds of resin.

8. A coating composition comprising a wrinkling oil selected from the group consisting of perilla and linseed oils, a non-wrinkling oil, a wrinkle finish resin, a drier and thinner, the wrinkling oil being at least 50 per cent of the oil content of the composition.

9. A composition as set forth in claim 1 in which the thinner is a low-boiling thinner.

10. A composition as set forth in claim 1 in which the thinner is a high-boiling thinner.

11. A composition as set forth in claim 1 in which the thinner contains both low-boiling and high-boiling components.

12. An article of manufacture carrying a wrinkle finish coating produced from a composition containing a wrinkling oil selected from the group consisting of perilla and linseed oils.

13. An article of manufacture carrying a baked wrinkle finish produced from a wrinkling oil composition containing blown perilla oil.

14. An article of manufacture carrying a baked wrinkle finish produced from a wrinkling oil composition containing blown linseed oil.

15. An article of manufacture carrying a baked wrinkle finish coating produced from a composition containing a wrinkling oil selected from the group consisting of perilla and linseed oils, the finish exhibiting areas of accentuated rugosities.

16. The process of producing wrinkling finishes on articles of manufacture which comprises applying thereto, a wrinkling finish composition containing a wrinkling oil selected from the group consisting of perilla and linseed oils, a wrinkle finish resin, a drier and thinner, and drying the coating at a temperature which produces a wrinkle finish.

17. The process of producing wrinkling finishes on articles of manufacture which comprises applying thereto a wrinkling finish composition containing blown perilla oil, a wrinkle finish resin, a drier and thinner, and baking the coated article at a temperature of 120° F. upwards.

18. The process of producing wrinkling finishes on articles of manufacture which comprises applying thereto a wrinkling finish composition containing blown linseed oil, a wrinkle finish resin, a drier and thinner, and baking the coated article at a temperature of 120° F. upwards.

19. The process of producing wrinkling finishes on articles of manufacture which comprises applying thereto a wrinkling finish composition containing blown perilla oil and blown linseed oil, a wrinkle finish resin, a drier and thinner, and baking the coated article at a temperature of 150° F. upwards.

20. An article of manufacture carrying a surface coating comprising a hard, unbroken wrinkle film containing a drying oil selected from the group consisting of perilla and linseed oils and a resin.

21. A wrinkle finish composition comprising a drying oil and a non-wrinkling oil in proportions to yield a flexible wrinkle finish when dried on a surface coated therewith.

22. An article of manufacture carrying a wrinkle finish composition of a drying oil and a non-wrinkling oil in proportions yielding a flexible wrinkle finish coating.

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March 13, 1934. F. B. ROOT **1,950,417**

WRINKLE FINISH FOR FLEXIBLE ARTICLES

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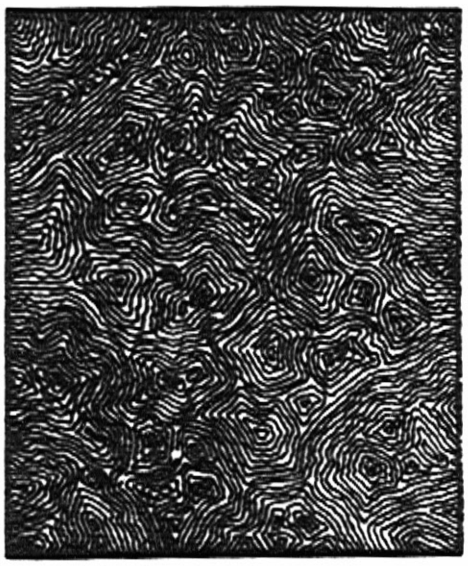
Fig. 1.



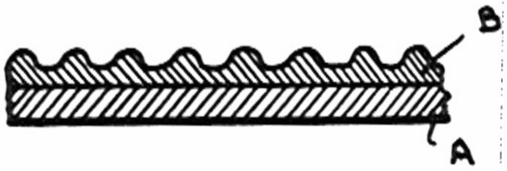
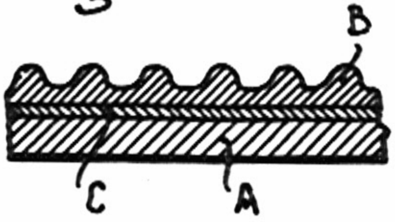


Fig. 2.

Fig. 3.



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WRINKLE FINISH FOR FLEXIBLE ARTICLES

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40 Claims. (Cl. 91—70)

This invention relates to that class of finishes known as wrinkle finishes, and more particularly is directed to compositions and methods which are adapted to produce wrinkle finishes on flexible articles, such as leather, paper, cloth, artificial leather, rubber, etc., and to articles carrying such finishes.

Wrinkling finishes with which the present invention is concerned are quite distinct from any of the finishes known in the prior art. In that prior art, in the production of continuous finishes, an attempt was made to produce as smooth a finish as possible. The so-called crackle finishes need not concern us here for the reason that such finishes are discontinuous, a portion of an upper coat being broken, so that a lower coat is visible to produce the crackle effect. The wrinkle finishes, on the other hand, are concerned with continuous finishes or coatings.

One of the objects of the present invention is the production of wrinkle finishes on porous and pliable bases including leather, paper, cloth, artificial leather, rubber, etc.

In the production of such wrinkle finishes, a coating of selected composition is applied to the surface of the desired article, and the coated article is then subjected to drying conditions under which wrinkling is developed. The following may be taken as a possible explanation of the wrinkling action, but it should be understood that in offering this explanation, the invention is not limited thereby, nor by the theoretical considerations presented herein, since the compositions and methods herein outlined result in a substantial and desirable wrinkle coating or finish, and are not limited in any manner by the theoretical considerations presented. I may offer by way of explanation, however, what appears to be the cause of such wrinkling effect. The wrinkling appears to be due to rapid oxidation of the surface of the applied film forming a skin over the less oxidized material on the interior of the film, the surface skin increasing in volume and expanding laterally, and the less oxidized material on the interior of the film being of a lower viscosity, flows into the folds produced by expansion of the surface skin. The general effect is that of a level surface carrying ridges projecting therefrom and running over the surface. These ridges, while distributed throughout the surface, do not form a regular pattern. Nevertheless a finish of pleasing and attractive appearance is obtained.

There is set forth below a more detailed description of the compositions and methods utilized for the production of the articles included within the present invention, but it should be understood that this more detailed description is given by way of explanation only, and not by way of limitation, since various changes may be made therein by those skilled in the art without departing from the scope and spirit of this disclosure.

In connection with that more detailed description there is shown in the accompanying drawing in

Figure 1 a plan view of a flexible base carrying the wrinkle finish of the present invention; in

Figure 2 a cross section of the article of Figure 1 enlarged to show the ridges in greater detail, the coating being applied directly to the base; and in

Figure 3 a cross section enlarged to show the ridges in greater detail in which the wrinkle finish coating is applied over an intermediate coating, the latter being applied directly to the porous base.

In the production of wrinkle finishes upon porous pliable bases, certain considerations are noted. The finish must be flexible after it has been baked, and must retain that flexibility for a relatively long period of time. This flexibility may be secured by the use of a long oil wrinkling formula, that is a composition in which the oil content is relatively high. Desirably the composition should contain a large amount of a wrinkling oil, and in addition, in order to modify the size and type of wrinkles, as well as to increase the flexibility, it is advisable to include a non-wrinkling oil, such as a slow drying oil, which, when dry, forms a flexible film of which soya bean oil is exemplary, or a non-drying oil such as castor or rape-seed oil. Plasticizers and flexibilizers are also desirable ingredients for producing or increasing flexibility.

When the material being treated is leather, or other material which might be adversely affected by undue heating, the finish should be capable of being baked at a low temperature, a temperature low enough to avoid any danger of damaging the leather or other material to which the finish has been applied. Compositions which bake at fairly low temperatures are obtainable by including relatively large quantities of a wrinkling oil in the formula.

A wrinkling finish for use on leather, etc., must also be susceptible to hardening in a fairly short period of baking. This results in economy through increased production, and also prevents injury of the leather, or other material, through long heating. Quick hardening may be secured among other things by the use of a liberal amount of driers, especially a cobalt drier, such as cobalt linoleate.

It is not safe generally to subject leather, paper, cloth, rubber, artificial leather, and similar materials to a high temperature for any length of time, since these substances have a tendency to deteriorate and to become brittle on prolonged heating. Also thick porous masses, such as plaster-board, plaster-castings, fiber-board, card-board, wood, etc. to which a baked finish is applied are preferably finished by baking at the lowest temperature possible in order to avoid blistering. Air in the pores of the material expands to such an extent as to push the still plastic finish away from the surface of the material.

For producing the desired effect, compositions are chosen which, under proper drying or baking conditions, give the particular effect denominated. The drying oils have proved to be desirable components of such wrinkle finish varnishes or compositions. Among the drying oils, there may be noted for use for these purposes the more common materials such as blown linseed oil, raw linseed oil, perilla oil, China wood oil, blown China wood oil, and partially oxidized or preoxidized China wood oil. The oils vary in their rate of oxidation and their wrinkling properties as is more fully described below. An investigation of the various drying oils that are available shows that the conditions under which these drying oils give the best results vary with the particular drying oil being utilized. For example while excellent results may be obtained with raw China wood oil or with blown China wood oil, the best effects with perilla and linseed oils are obtained when these oils are used either in the form known as blown or oxidized oils. The present application is particularly concerned with the utilization of the more common drying oils in the production of wrinkle finishes, but the other less commonly known drying oils that may be mentioned and may be similarly utilized include chia, oiticica, walnut, poppy-seed, sunflower, candle nut, lumbang, hempseed, fish, etc. The oils which may be used in the production of wrinkle finishes may be generically referred to as "wrinkling oils" to distinguish them from the large class of non-wrinkling oils including primarily the semi-drying and non-drying oils. In referring to the wrinkling oils with which the present invention is particularly concerned for reasons set forth herein, oils like perilla and linseed which give best results in the production of wrinkle finishes when they are in the blown form are referred to as oils of the perilla-linseed type.

An oil which like China wood oil gives excellent results in wrinkle finishes, whether blown or unblown, is referred to hereinafter as an oil of the China wood type.

The various oils differentiate themselves to some extent in their properties in the production of wrinkle finishes. For example, comparisons of four oils, namely blown China wood oil, untreated China wood oil, blown perilla oil and blown linseed oil, show that the relative activity of these wrinkling oils in wrinkling finishes may be expressed in a series as follows: Blown China wood oil 5; raw China wood oil 6½; blown perilla oil 8; and blown linseed oil 12. This series expresses the fact that the oils bearing the lowest numbers are the more powerful in their wrinkling tendencies and consequently the order of the oils given above represents the wrinkling power of these oils in the specified compositions, blown China wood oil being the most powerful of the oils mentioned.

Further comparison of the several oils in relation to the resin content when such resin is of the wrinkling finish type to be further defined below shows that for the production of the best results with such oil-resin compositions there is a difference in oil-resin ratios depending on the type of oil used. For example with blown China wood oil the best appearance is obtained when the ratio of oils to resin is approximately from 6 to 18 gallons of oil to 100 lbs. of resin. For blown perilla oils the best ratios are from 10 to 30 gallons of oil to 100 lbs. of resin, while for blown linseed oil the best ratios are from 14 to 35 gallons of oil to 100 lbs. of resin. For untreated China wood oil the ratio is approximately from 8 to 25 gallons of oil to 100 lbs. of resin. These oil-resin ratios also illustrate a difference between the action of the oil in the wrinkling finish composition.

A further factor which illustrates differences between the several wrinkling oils is in connection with the drying and baking operation. Other factors being the same except for variations in the composition in the character of oil used, show that in the production of the best effects in compositions utilizing wood oil (untreated) the time is approximately ten per cent more than when blown China wood oil is used, while for blown perilla and blown linseed oil the baking temperature should be from 20 to 25 per cent more than that used with blown China wood oil compositions. Unless otherwise indicated below in further defining the present invention, it will be understood that when blown perilla and blown linseed oils and other blown oils of the perilla-linseed type are referred to, these oils include oxidized oils and similar products although they may not be specifically mentioned at the particular point under consideration.

While specific drying oils are mentioned above, it is understood of course that mixtures of the various drying oils particularly in their blown or oxidized condition may be utilized in the production of satisfactory wrinkle finishes, the range of proportions when mixtures of such oils are used being the arithmetical average of the ranges of the oils when used alone. And while a varnish or other composition to be used to produce a wrinkle finish must contain a substantial proportion of a wrinkling oil, admixtures of the non-wrinkling oils may be used so long as the amount of the latter is not sufficient to eliminate the desired wrinkle effect in the finish obtained.

In general it may be stated that in such admixtures the best effects are obtained if not less than half of the oil mixture is a wrinkling oil. For example two or more wrinkling oils and two or more non-wrinkling oils may be mixed and a varnish produced therefrom with the addition of the resins, driers and thinners. In such case the sum of the amounts of all the wrinkling oils should desirably be at least one-half of the total oil mixture. Among the non-wrinkling oils there may be mentioned specifically soya bean oil, and other semi- and non-drying oils such as cotton seed, corn, castor, rape-seed, rubber seed, olein, etc. Such non-wrinkling oils may be either the raw oils or the blown or otherwise treated oils.

Of the resins usable in the production of wrinkle finishes, which resins may be denominated wrinkling finish resins, the following are noted: Congo, kauri, damar, Cumar, Pontianak, manila, Zanzibar, elemi, mastic, phenol-formaldehyde resins particularly of the oil soluble variety, glycerol-phthalic condensation products particularly of the oil soluble variety, paracoumarone, Congo ester, rosin ester, and mixtures of these resins and resin esters.

Certain substances exhibit a tendency to inhibit the wrinkling effect. Among such substances there may be mentioned pyroxylin, nitrocellulose, gilsonite, and rosin. These wrinkle inhibiting substances should therefore not be used in any proportions in the composition which would prevent the desired development of wrinkles in the finish. Such wrinkle inhibiting substances when used in small amounts have a tendency to produce very fine wrinkles while in large amounts they may completely eliminate the wrinkling effect. Rosin, if used in large amount, also tends to produce irregularities in the size and in the interval between wrinkles in the resulting finish. While rosin in any amount which adversely affects the wrinkling properties should be avoided, rosin in limited amount is a desirable ingredient, since it acts to prevent the jellying or polymerization of the oil.

Solvents or thinners are not a main factor since any moderately volatile solvent can be used. Preferably the major portion of the solvent or thinner should distil below about 325° F. The thinner used may be a mixture of several thinning components. The low boiling thinner evaporates more quickly from the varnish or enamel film promotes the rapid formation of a surface skin, and during drying assists in maintaining a greater differential between the degree of oxidation of the surface skin and the oil within the film. When the finish is dried at elevated temperatures, the use of low boiling thinners also assists in eliminating any tendency toward sagging of the finish during the drying operation.

The following are illustrative of the thinners and solvents that may be used: light naphtha, toluol, benzol, petroleum ether or ligroin (benzine), acetone, carbon tetrachloride, alcohol, chloroform, ethyl acetate, etc., and mixtures of these. To some extent, the character of the finish may be varied by the quantity and character of the thinner used. Turpentine and other high-boiling thinners may also be used. More pronounced wrinkles are produced with compositions containing the lower boiling thinners. These thinners and solvents do not produce the wrinkling effect, but their use is for the purpose of permitting the spreading of the oil and resin composition on the surface, after which function the thinners and solvents evaporate.

Driers and drier combinations are also an important element in the composition since the wrinkled effect appears to be somewhat determined by the rate of oxidation of the wrinkling oil. Such driers as cobalt acetate, red lead, manganese borate, lead linoleate, etc., used alone or in admixture with each other or with other driers are illustrative. These driers primarily hasten the hardening action. They also speed up the wrinkling somewhat.

The following examples illustrate compositions that may be utilized in the production of wrinkling finishes on flexible or pliable materials:

		Pounds
(1)	Congo	100
	Rosin	5
	Red lead	1¾
	Manganese borate	¾
	Cobalt linoleate	2
		Gallons
	China wool oil	2½
	Blown wood oil	11½
	Blown soya bean oil	5
	Light naphtha	5
	Toluol	20

Formula 1 represents a 19 gallon varnish, which gives quite pronounced wrinkles, the size of which wrinkles can be modified by allowing the film to air-dry before it is baked. It has been found that the size of wrinkles in these finishes may be modified by this expedient of air-drying prior to the baking operation. If the article is placed in the oven immediately after the wrinkling varnish or enamel has been applied, finer wrinkles are obtained than if the film is allowed to air-dry before it is placed in the oven. For example, after drying at room temperature for about an hour before being placed in the oven, much coarser wrinkles are obtained in the finish than if the article is baked immediately after the film is applied.

		Pounds
(2)	Congo	100
	Rosin	5
	Red lead	1¾
	Manganese borate	¾
	Cobalt linoleate	2
		Gallons
	China wood oil	2½
	Blown wood oil	9¾
	Blown soya bean oil	5¾
	Light naphtha	5
	Toluol	19

This is similar to Example 1 except for slight differences in the amount of blown wood oil and soya bean oil. The wrinkling effect obtained by baking the film is of a fairly fine pattern the size of the wrinkles being capable of modification as to size by a short period of preliminary air-drying.

The formulas given above can also be used as a wrinkling finish that can be applied to sheet metal that is intended for stamping and forming. The elasticity and hardness of the finish after baking are sufficient to withstand the effects of such operations.

		Pounds
(3)	Congo	100
	Litharge	2
	Manganese oxide	½
	Cobalt linoleate	5
		Gallons
	China wood oil	2½
	Blown wood oil	15½
	Blown soya bean oil	16
	Light naphtha	5
	Toluol	24

The above varnish gives a particularly good wrinkled effect. It is of the long-oil type and contains a large amount of non-wrinkling oil.

		Pounds
(4)	Amberol	100
	Cobalt linoleate	2½
		Gallons
	Blown wood oil	15
	Rape-seed oil	10
	Toluol	35

This formula gives fine wrinkles and a flexible film. The color is quite light due to the type of resin that is used. This makes it useful as a clear wrinkle finish over colored stenciled or printed designs on paper, tin, etc.

"Amberol" is a name for synthetic resins made from phenol formaldehyde and rosin or rosin ester. Many phenol formaldehyde materials produced without the rosin ester are not soluble in oils, but by including enough rosin or its glyceride in the compositions, an oil soluble product results. These resins are known by different names, such as "Amberol", "Albertol" and "Bakesite".

		Pounds
(5)	Amberol	100
	Cobalt linoleate	3
		Gallons
	Blown linseed oil	15
	Blown wood oil	9
	Light naphtha	5
	Toluol	22

This formula illustrates the use of blown linseed oil and also denotes a composition that does not contain a non-wrinkling oil. The wrinkles are fairly coarse and quite uniform.

		Pounds
(6)	Congo	100
	Rosin	5
	Red lead	1¾
	Manganese borate	¾
	Cobalt acetate	2
		Gallons
	China wood oil	2½
	Blown wood oil	6½
	Blown linseed oil	3½
	Rape-seed oil	1¾
	Dibutyl phthalate	1¾
	Light naphtha	5
	Toluol	22

This composition gives well-defined and fairly course wrinkles, and illustrates the use of a non-volatile liquid, dibutyl phthalate, in the production of a wrinkled coating.

		Pounds
(7)	Congo	40
	Amberol	60
	Lead linoleate	5½
	Manganese borate	1¾
	Cobalt linoleate	2
		Gallons
	China wood oil	1
	Blown perilla oil	12
	Blown wood oil	2½
	Rape-seed oil	6
	Light naphtha	5
	Toluol	24

The above is exemplary of a varnish containing blown perilla oil and this formula gives a satisfactory wrinkled effect.

In compounding these compositions, the following method is given for the production of such a composition from Congo, rosin, China wood oil, blown China wood oil, red lead, manganese borate, light naphtha and toluol. This method of compounding the materials is merely illustrative. The Congo is placed in a kettle and melted fairly close until very fluid. This will generally involve a temperature of about 600° F. The raw China wood oil is then added, and this will cool the mixture considerably. Immediately the rosin is added, and this will prevent jellying or polymerization. The red lead is then added, and the temperature run back to approximately 565°. The temperature of the mixture is allowed to drop to 520° F. and the blown China wood oil and manganese borate are added. Reduction in temperature to approximately 520° at this point is desirable to avoid flashing of blown China wood oil. The admixture of materials at this point will reduce the temperature to about 480°. It is then heated to 510°. The temperature is then reduced to 390°, and the thinners, naphtha and toluol, added.

As indicated above non-wrinkling oils may be utilized in the composition. Among the non-wrinkling oils available for these purposes there are mentioned raw soya bean oil, and other semi- or non-drying oils, such as cotton seed, corn, castor, rape-seed, rubber-seed, olein, etc. These oils may be used either as raw oils, or as boiled oils.

In producing the improved wrinkling finishes of this invention, it is advantageous to dry or bake the applied finish or varnish or enamel preferably at an elevated temperature, depending on the type of article being treated. While for metals and other surfaces resistant to deterioration by heat, temperatures as high as 450° F. and even higher may be utilized, for the finishes here described, the temperatures used should desirably not rise above 225° F.; and temperatures from 160° to 200° F. include the range most suitable for employment both as to the appearance of the finish thus obtained, and with reference to the effects of heat upon the base to which the finish is applied. Temperatures as low as 120° F. have also been utilized. At these elevated temperatures rapid oxidation of the surface of the applied film is promoted, and any tendency toward diffusion of oxidation products from the surface into the interior of the film is lessened. In general, it may be said that drying at these elevated temperatures accentuates the wrinkling and assists in providing a harder finish.

Wrinkling finishes should be baked for a sufficient length of time to produce a coating that is hard enough for the purposes in hand. For example when lacquers or other compositions containing solvents are to be applied upon the wrinkle finish serving as an under coat the baked finish should be hard enough to withstand the action of such solvents or lacquers. At 200° F. the coating is sufficiently hard for this purpose after about 2 hours baking. With higher temperatures shorter periods of drying or baking may be utilized while at lower temperatures longer heating is generally required. Thus at 225° F. about 1½ hours is sufficient time while at 150° F. about 4 hours baking is required. The baking period is also somewhat dependent on the type of composition used since wrinkling finish compositions containing wrinkling oils of the perilla-linseed type require from 20 to 25 per cent longer heat treatment at the same temperature than do similar compositions utilizing blown wood oil.

In addition to the higher oil content providing added flexibility so that the long-oil compositions are desirable for use in metal stamping or on leather, paper, cloth, rubber, etc., the higher oil content in the composition also results in wrinkling at lower temperatures which is also desirable with these flexible or pliable materials. As a general rule sufficient flexibility in the coating will be secured with an oil content of at least 18 gallons of oil to 100 lbs. of resin. This amount of oil may be made up of any proportion of wrinkling to non-wrinkling oil within the limits discussed above. However the stated amount of oil for securing flexibility may vary with other considerations, and that given is exemplary.

While in many instances, the wrinkling finish may be applied directly to the surface of the leather, as illustrated in Figure 2 of the drawing, where the wrinkle finish coating B is shown applied directly to the base A, it has been found desirable, especially if the material is very porous to apply a coat of a flexible sizing to the article before the application of the wrinkling finish, this sizing acting as a sealer or homogenizer to the surface. This is illustrated in Figure 3 of the drawing, where the base A is first provided with a sealing coat C, upon which is placed the wrinkle finish B. The use of a sealing coat is desirable in those cases where the porosity of the base is such that the wrinkling varnish or enamel would be absorbed to such an extent as to prevent or substantially eliminate the wrinkling effect. Furthermore, material absorption of the composition by the base requires longer baking, since evaporation of the solvent and diffusion of the oxygen to the interior is hindered.

As exemplary of such sealing or sizing coats, there may be used a flexible-long oil varnish, a highly plasticized nitrocellulose lacquer or any other material which adheres to the leather, etc., and dries to yield a smooth flexible coating to which the wrinkling finsh may be applied. The following formula for a lacquer which is particularly applicable as a sealing coat is noted:

	Per cent
Nitrocellulose	10
Heavy blown castor or rape-seed oil	15
Dibutyl phthalate	5
Solvent	70

This lacquer is thinned to spraying consistency and applied to the leather. After drying for about an hour the wrinkling composition is sprayed on and the leather, etc. baked.

Another suitable sizing material is obtained by adding a large quantity of thinner, such as toluol to any wrinkling composition given above. An equal volume of thinner may be used for this purpose. The thinned material is then sprayed on the leather, and either baked or air-dried. The coating thus obtained is generally not heavy enough to wrinkle, and much is absorbed by the surface, preventing absorption of the subsequent coat.

It has been found desirable also to avoid the presence in the sealing coat over which a wrinkle finish is to be applied, of appreciable amounts of soluble wrinkle-inhibitive materials, such as rosin or the other substances referred to above.

There have been set forth above a number of considerations directed to the types of compositions and the baking temperatures which affect the character of the wrinkles produced in the finish. Other factors, however, are also found which affect the character of the wrinkles produced. For example the thickness of the applied film will result in differences in the finish. Thinner films give finer wrinkles and thicker films coarser wrinkles. When spraying is used, spray nozzles giving coarse atomization give greater deposition of composition and consequently coarser wrinkles, while on the other hand spray nozzles of finer atomization give thinner films with finer wrinkles. To illustrate the production of a layer which gives a satisfactory wrinkling effect, a gallon of the stated wrinkling compositions may be used to cover an area of about 260 square feet.

For the production of wrinkle finishes having a textured effect by the production of accentuated rugosities at certain points or areas in the finish the article to be treated may desirably be coated with a relatively heavy coating of the desired composition and baked in an inclined position which inclined position may vary from a small angle to the horizontal to a vertical position. The incline of the surface of the article bearing the coating produces a flowing or movement of the wrinkle coating after it is applied and at or about the time when the baking commences and before the baking has caused the setting of the finish to take place to a point where such movement or flowing would be prevented. The effect of such treatment is to produce waves or areas of accentuated rugosities or wrinkles in the more regularly wrinkled finish.

The flowing or movement of the wrinkle coating after it is applied which results in the accentuated rugosities set forth above may be accomplished in other ways than merely by gravity due to the position of the work. For example air currents or other flowing methods may be used.

When gang sprays are used to apply the composition, at certain points the atomization may be made coarser to produce heavier or thicker layers at these points resulting in coarser wrinkles in such thicker layers. Accentuated rugosities distributed in the more uniformly wrinkled finishes may be produced in this manner.

The wrinkle finishes are characterized by an exceedingly important property, namely their remarkable hiding quality. This term "hiding quality" is used in more or less the same meaning that the expression "covering quality" is used in the paint art. It is a remarkable thing for example that a single coat of unpigmented wrinkle finish may be applied to a bright metal surface and the resulting finish will completely mask the metal surface. Other pigmented compositions generally require at least several coats in order to secure a comparable hiding effect.

The baked or dried finishes of the present invention are particularly resistant to softening by lacquer compositions and particularly the solvents used in nitrocellulose lacquers. So that although the rugose surface of the wrinkle finish affords a very extensive area for the action of such solvents or lacquers the baking creates a resistance to such softening action.

Consequently the wrinkle finishes and compositions used for producing such coatings are particularly desirable as under coats where a wrinkle finish is desired and such finishes may then be given one or more coats of pyroxylin enamels, oil enamels, or baking japans. When pigments are used in the wrinkle finish which have a tendency to change or to darken under the action of elevated temperatures, these finishes may be coated with pyroxylin lacquer compositions.

Having thus set forth my invention, I claim:

1. An article of manufacture comprising a flexible material carrying a flexibilized wrinkle finish coating.

2. An article of manufacture comprising a flexible material carrying a wrinkle finish coating containing oils including a wrinkling oil and a wrinkle finish resin, the amount of oil being sufficient to give substantial flexibility to the coating.

3. An article of manufacture comprising a flexible material carrying a sealing coating, and a superposed wrinkle finish coating.

4. An article of manufacture comprising a flexible material carrying a flexibilized baked wrinkle finish coating.

5. An article of manufacture comprising a flexible material carrying a baked wrinkle finish coating containing oils including a wrinkling oil

and a wrinkle finish resin, the amount of oil being sufficient to give substantial flexibility to the coating.

6. An article of manufacture comprising a flexible material carrying a sealing coating, and a superposed baked wrinkle finish coating.

7. An article of manufacture comprising flexible sheet material carrying a wrinkle finish coating containing oils including a wrinkling oil, and a wrinkle finish resin, the amount of oil being sufficient to give substantial flexibility to the coating.

8. An article of manufacture comprising flexible sheet material carrying a sealing coating, and a superposed baked wrinkle finish coating.

9. An article of manufacture comprising flexible sheet material carrying a sealing coat comprising a wrinkling oil and a wrinkle finish resin, and a superposed wrinkle finish coating.

10. An article of manufacture comprising flexible sheet material carrying a sealing coat comprising a flexible sizing, and a superposed wrinkle finish coating.

11. An article of manufacture comprising flexible sheet material carrying a sealing coat comprising a highly plasticized nitrocellulose lacquer, and a superposed wrinkle finish coating.

12. The method of producing wrinkle finishes on flexible articles of manufacture which comprises applying to said article a wrinkle finish coating, and baking said coating at a temperature sufficient to produce the wrinkle finish, but below that at which the article would be deleteriously affected.

13. The method of producing wrinkle finishes on flexible articles of manufacture which comprises applying to said article a wrinkle finish coating containing oils including a wrinkling oil and a wrinkle finish resin, the amount of oil being sufficient to give substantial flexibility to the coating, and drying said coating at a temperature sufficient to produce a wrinkle finish but below that at which the article would be deleteriously affected.

14. The method of producing wrinkle finishes on flexible articles of manufacture which comprises applying to said article a sealing coat, drying the same, applying a wrinkle finish coating, and drying the latter at a temperature sufficient to produce a wrinkling finish but below that at which the article would be deleteriously affected.

15. The method of producing wrinkle finishes on articles of manufacture which comprises applying to said article a wrinkle finish coating, air-drying said coating, and then baking the same.

16. The method of producing wrinkle finishes on flexible sheet material which comprises applying to said material a wrinkle finish coating and drying said coating at a temperature below that at which the material would be deleteriously affected, but high enough for a sufficient length of time to produce a wrinkle finish.

17. The method of producing wrinkle finishes on porous material which comprises applying to said material a wrinkle finish coating, and drying said coating at a temperature sufficient to produce a wrinkle finish but below that at which blistering appears in the coated article.

18. The method of producing wrinkle finishes on a flexible sheet material which comprises baking flexible material carrying a flexibilized wrinkle finish coating at a temperature of from 160 to 200° F.

19. A wrinkle finish composition for producing wrinkle finishes upon flexible articles, said composition comprising a wrinkle oil and a wrinkle finish resin, drier and solvent, the proportions of the ingredients being sufficient to yield wrinkle finishes, and the amount of oil being sufficient to give substantial flexibility to the coating.

20. A composition as set forth in claim 19, which includes a substantial proportion of a non-wrinkling oil.

21. A coating composition comprising a wrinkling oil, a non-wrinkling oil, a wrinkle finish resin, a drier and thinner in proportions to yield a wrinkle finish.

22. An article of manufacture carrying a wrinkle finish coating produced with a composition containing a wrinkling oil and a non-wrinkling oil, the proportion of the latter being insufficient to prevent wrinkling of the composition.

23. A coated material comprising a flexible base material, and a flexible coating thereon having a crinkled surface obtained without mechanical embossing, said coating comprising heat treated China wood oil, a semi-drying oil and a suitable filler.

24. A coated material comprising a fabric base material and a flexible coating thereon having a crinkled surface obtained without mechanical embossing, said coating comprising a heat treated mixture of China wood oil, a semi-drying oil and a drier.

25. A coated material comprising a woven base fabric and a flexible coating thereon having a crinkled surface obtained without mechanical embossing, said coating comprising a heat treated mixture of substantially two parts of China wood oil to one part of a semi-drying oil and a drier.

26. A coated material comprising a flexible base material and a flexible coating thereon having a wrinkled surface, said coating comprising a wrinkling oil, a semi-drying oil, and a suitable filler, in proportions to yield a flexible coating when dried on an article of manufacture.

27. A coated material comprising a fabric base material and a flexible coating thereon having a wrinkled surface, said coating comprising a wrinkling oil, a semi-drying oil, and a drier, in proportions to yield a flexible wrinkle coating when dried on an article of manufacture.

28. A coated material comprising a flexible base material and a flexible coating thereon having a wrinkled surface, said coating comprising a wrinkling oil, a non-drying oil and a suitable filler.

29. A coated material comprising a fabric base material and a flexible coating thereon having a wrinkled surface, said coating comprising a wrinkling oil, a non-drying oil and a drier, in proportions to yield a flexible wrinkle coating when dried on an article of manufacture.

30. A composition for producing wrinkle finishes upon flexible articles, said composition comprising a wrinkle oil, a semi-drying oil, and a wrinkle finish resin, drier and solvent, the proportions of the ingredients being sufficient to yield wrinkle finishes and the amount of oil being sufficient to give substantial flexibility to the coating.

31. A wrinkle finish composition adapted to yield a flexible wrinkle finish when dried on articles of manufacture carrying the same, said composition comprising a heat-treated China wood oil, a semi-drying oil, and a suitable filler.

32. A wrinkle finish composition adapted to yield a flexible wrinkle finish on articles of manufacture carrying the same, said composition

comprising a heat-treated mixture of China wood oil, semi-drying oil, and a drier.

33. A wrinkle finish composition adapted to yield a flexible wrinkle finish on articles of manufacture carrying the same, said composition comprising a wrinkling oil, a semi-drying oil, and a suitable filler.

34. A wrinkle finish composition adapted to yield a flexible wrinkle finish on articles of manufacture carrying the same, said composition comprising a wrinkling oil, a semi-drying oil, and a drier.

35. A wrinkle finish composition adapted to yield a flexible wrinkle finish on flexible articles, said composition containing a wrinkling oil and a plasticizer, in proportions to yield a plasticized flexible wrinkle coating when dried on a flexible article carrying the same.

36. A wrinkle finish composition adapted to yield a flexible wrinkle finish on flexible articles carrying the same, said composition containing a wrinkling oil, a non-wrinkling oil, and a non-volatile organic liquid plasticizer in proportions to yield a plasticized flexible wrinkle coating when dried on a flexible article carrying the same.

37. A wrinkle finish composition adapted to yield a flexible wrinkle finish on articles of manufacture carrying the same, said composition comprising a wrinkling oil, and dibutyl phthalate, in proportions to yield a plasticized flexible wrinkle coating when dried on a flexible article carrying the same.

38. An article of manufacture carrying a wrinkle finish coating of a wrinkling oil and a plasticizer, in proportions yielding a flexible wrinkle finish coating.

39. An article of manufacture carrying a wrinkle finish composition of a wrinkling oil, a non-wrinkling oil, and a non-volatile organic liquid plasticizer, in proportions yielding a flexible wrinkle finish coating.

40. A flexible article of manufacture carrying a wrinkle finish composition of a wrinkling oil and dibutyl phthalate, in proportions yielding a flexible wrinkle finish coating.

FRANK BRIAN ROOT.

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WRINKLE FINISH

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19 Claims. (Cl. 260—19)

This invention relates to wrinkle varnish composition, and more particularly deals with a wrinkle finish produced from oils such as linseed oil without blowing of the oil.

Hitherto the preparation of wrinkle compositions has been considered to require the use of China-wood oil, oiticica oil, and other similar drying oils containing conjugated double bonds, or mixtures of them. These oils, or mixtures, were generally used either in their raw or natural state, or subsequent to preliminary treatment as by blowing, depending on the particular characteristics required in the finished product and the nature of the individual oil or mixture of oils used.

It has also been known hitherto that drying oils possessing unconjugated double bonds in their structure could be employed in the formulation of wrinkle compositions if they were to be submitted to a blowing operation for the purpose of causing them to combine, at least in part, with the oxygen in the air. Such blown oils, however, offer certain disadvantages in view of the fact that a substantial amount of air is absorbed by the oil and remains chemically uncombined. This absorbed air appears to become intermolecularly dispersed, with the result that auto-oxidation occurs during storage and gelling and precipitation of the oil takes place.

More recently use has been made of blown dehydrated castor oil as a substitute for the costly drying oils previously used in the preparation of wrinkle composition.

Still more recently wrinkle varnishes have been produced by chemically combining unblown drying type oil with oil soluble resin and air at elevated temperature. The wrinkle compositions resulting from this procedure do not exhibit the tendency to gel and precipitate which is commonly present when blown oils are used, and this is believed to be due to the fact that the reaction temperature employed is so much higher than normally used in blowing operations that the oxygen which is not chemically combined is driven out instead of being held dispersed in the oil.

According to the present invention, I am able to produce a wrinkle composition from oils such as linseed oil without either blowing the oil prior to use or blowing the varnish during the cooking operation. My present invention is thus a faster and more economical manner of producing wrinkle compositions.

As typical examples of formulations and procedures according to my invention, but without thereby limiting myself to the specific details of procedure and proportions indicated, the following illustrative examples are given:

Example I

Modified phenol aldehyde resin	lbs	100–125
Polycarboxylic acid	lbs	1.5–2.5
Linseed type oil	gals	12–20
Hydrocarbon solvent	gals	22–30
Cobalt drier	gal	0.75–1

In preparing the wrinkle composition of my invention from the aforementioned components, the oil and resin are heated to approximately 400° F. and held at that temperature until the resin is thoroughly dispersed. Thereupon, there is added to the batch the polycarboxylic acid and the temperature is increased to approximately 550° F. The batch is held at this temperature until it attained the desired body or viscosity. A satisfactory viscosity or end point may be considered to have been reached when a drop falls from a stirring rod with a slight thread-like filament while hot. When this condition has been reached the mixture is withdrawn from the fire, allowed to cool to approximately 400° F., and the solvent and drier added thereto.

Example II

Amberol F7	lbs	100
Maleic anhydride	lbs	2
Varnish linseed oil	gallons	15
Mineral spirits	do	5
Solvesso #2	do	16
Nuodex cobalt 6%	do	¾

Example III

Amberol F7	lbs	100
Maleic anhydride	lbs	2
Varnish linseed oil	gallons	15
Mineral spirits	do	5
Toluol or xylol	do	16
Nuodex cobalt 6%	do	¾

Example IV

Amberol F7	lbs	100
Maleic anhydride	lbs	2
Perilla oil	gallons	15
Mineral spirits	do	5
Solvesso #2	do	16
Nuodex cobalt 6%	do	¾

Example V

Amberol F7	lbs	100
Maleic anhydride	lbs	2
Perilla oil	gallons	15
Mineral spirits	do	5
Xylol or toluol	do	16
Nuodex cobalt 6%	do	¾

In preparing the wrinkle composition of my invention from the components set forth in Examples II, III, IV and V, substantially the same procedure may be followed as in Example I.

It will be understood by those skilled in the art that "mineral spirits" is that grade of petroleum product of either a paraffinic or naphthenic origin which is commonly known in the trade as turpentine substitute, while Solvesso #2 is a hydrogenated naphtha having a volatility similar to that of xylol and manufactured by Standard Oil Company. Nuodex cobalt 6% is a cobalt naphthenate drier solution in which the metallic cobalt amounts to about 6%.

Those skilled in the art will know that Amberol F7 is a resin modified phenol-formaldehyde type of resin and that, therefore, other oil soluble and non-reactive phenol-aldehyde resins of the same general characteristics may be used in the practice of my invention. These include resins known by trade names such as Beckacite, Durez, Para-dura, Durite, Locto, Paranol, Varcum, etc. In every case an oil soluble and non-reactive quality must be employed. The term "non-reactive" is used in the sense employed by Siddle in "Varnish Making," 1940 (Chemical Publishing Co., pages 121 and 122). By "reactivity" is meant the liberation of water and formaldehyde on cooking with drying oils.

The selection of thinners which may be employed in the practice of my invention is not critical, although preference should be given to those products of high volatility such as toluol, xylol, light naphtha, etc. Of course, a small quantity of low volatile solvent may prove of value to bring about a sudden chilling of a batch in the event that it should body a trifle more than necessary or required.

Many different driers may be used, but preference should be given to those commonly known as "top driers" and which tend to form the surface skin which is so desirable in wrinkle compositions. The resinate, linoleate and naphthenate type of drier, characterized by ready solubility, proves very suitable for this purpose.

While I have given examples using varnish grade linseed oil and perilla oil, it will be understood that other like oils having the general characteristics of these oils, and mixtures thereof, may be used, the choice depending primarily on availability and cost.

The choice of resin to be used will depend on the desired characteristics of the wrinkle varnish base. As has been noted hereinbefore, rosin modified phenol-aldehyde resin may be used satisfactorily in the practice of my invention. Rosin modified alkyd resin such as maleic acid resin may be used likewise, and it will be understood that other polybasic acids or their anhydrides, including phthalic, tartaric, citric and malic may be substituted for maleic acid or maleic anhydride in the practice of my invention.

Furthermore, natural resins such as Congo, Kauri, Batu, Zanzibar, oil soluble Manila, Pontianak, etc., may be employed, but where such natural resins are used, they should first be "run" to make them oil soluble and the first step of the procedure hereinbefore described would have to be altered accordingly. In such case, for example, the resin would first be fused and the oil would then be added to it. The necessity for pretreating the natural resin will be fully appreciated by those skilled in the art.

It will be understood that metal driers other than cobalt compounds may be used, as, for example, those of manganese. The inherent characteristic of the drier to be used is its ability to bring about a rapid formation of a skin on the exposed surface of the film in order to cause the changes in volume between the surface of the film and the interior thereof which lead to the production of a wrinkle surface.

The wrinkle compositions produced according to the method of my invention may be further compounded with pigment ground in oil vehicle for the purpose of producing wrinkle enamels, and texture modifying ingredients of various sorts may be added thereto.

It will be noted by those skilled in the art that the major significance of this invention resides in the use of unblown oils of a type (linseed type) which the skill and teachings of the art have always considered impossible to use in the preparation of wrinkle varnishes. For example, no one acquainted with and skilled in the art of manufacturing wrinkle coating compositions would have considered the use of unblown linseed oil exclusively in the manufacture of such compositions; in fact, the teachings of the prior art clearly set forth that linseed oil and other similar oils act as inhibitors of wrinkle formation and should not be used in the preparation of wrinkle coating compositions except in very small amounts. It is clearly evident that the practice of this invention leads to a new, novel and unexpected result.

Furthermore, it will be noted that the type of oil employed in the practice of my invention is obtainable plentifully from domestic sources and is of stable price and quality. This is an additional advantage of great significance and value to the industry since it is freed from dependence on foreign sources of supply and from the necessity of using wrinkling oils such as tung oil and oiticica oil, the quality, cost and availability of which widely fluctuate.

Wrinkle compositions such as result from the practice of my invention are adapted to be sprayed and then baked at a temperature of from 200 to 250° F. for approximately one hour to produce a wrinkle finish of pleasing and uniform texture and exhibiting a satisfactory degree of toughness and hardness.

It will be understood that while I have set forth herein certain specific embodiments of my invention, it is not my intention to have my invention limited to or circumscribed by the specific details of procedure and proportions indicated in view of the fact that my invention is adapted to changes according to individual preference and conditions without departing from the scope thereof as defined in the appended claims.

I claim:

1. The method of making a wrinkle composition which comprises heating from 100 to 125 pounds of rosin modified phenol-aldehyde resin and from 12 to 20 gallons of unblown drying oil which in its native state is of the non-conjugated double-bonded type at a temperature of approximately 400° F. for time sufficient thoroughly to disperse the resin in the oil, adding to the mixture from 1.5 to 2.5 pounds of maleic anhydride, increasing the temperature to approximately 500° F. and holding to body, cooling to approximately 400° F., and adding thereto from 0.75 to 1 gallon of cobalt drier solution and from 22 to 30 gallons of hydrocarbon solvent, whereby a sprayable composition adapted to produce a uniform

wrinkle finish when applied to a surface and baked is obtained.

2. A wrinkle composition consisting of the heat reaction product of oil soluble resin selected from the group consisting of run natural resins requiring running for the production of oil solubility, rosin-modified alkyd resins, and phenol-aldehyde resins which do not evolve formaldehyde and water on cooking with drying oil, unblown drying oil which in its native state is of the non-conjugated double-bonded type, and 1.5 to 2.5 pounds of a polycarboxylic acid per each 100 pounds of resin in admixture with drier and thinner; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the polycarboxylic acid and heating to approximately 550° F.

3. A wrinkle composition consisting of the heat reaction product of oil-soluble resin selected from the group consisting of run natural resins requiring running for the production of oil solubility, rosin-modified alkyd resins, and phenol-aldehyde resins which do not evolve formaldehyde and water on cooking with drying oil, unblown drying oil which in its native state is of the non-conjugated double-bonded type, and 1.5 to 2.5 pounds of a polycarboxylic acid per each 100 pounds of resin in admixture with cobalt drier and thinner; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the polycarboxylic acid and heating to approximately 550° F.

4. A wrinkle composition consisting of the heat reaction product of rosin-modified phenol-aldehyde resin, unblown drying oil which in its native state is of the non-conjugated double-bonded type and 1.5 to 2.5 pounds of a polycarboxylic acid per each 100 pounds of resin in admixture with drier and thinner; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the polycarboxylic acid and heating to approximately 550° F.

5. A wrinkle composition consisting of the heat reaction product of rosin-modified phenol-aldehyde resin, unblown drying oil which in its native state is of the non-conjugated double-bonded type, and 1.5 to 2.5 pounds of a polycarboxylic acid per each 100 pounds of resin in admixture with cobalt drier and thinner; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the polycarboxylic acid and heating to approximately 550° F.

6. A wrinkle composition consisting of the heat reaction product of rosin-modified phenol-aldehyde resin, unblown perilla oil, and 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin in admixture with a top drier and thinner; the composition having been produced by first heating the mixture of oil and resin to approximatelly 400° F., then adding the maleic anhydride and heating to approximately 550° F.

7. A wrinkle composition consisting of the heat reaction product of rosin-modified phenol-aldehyde resin, unblown perilla oil, and 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin in admixture with a top drier and hydrocarbon solvent; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the maleic anhydride and heating to approximately 550° F.

8. The method of making a wrinkle composition which consists in heat reacting oil-soluble resin selected from the group consisting of run natural resins requiring running for the production of oil solubility, rosin-modified alkyd resins, and phenol-aldehyde resins which do not evolve formaldehyde and water on cooking with drying oil and unblown drying oil which in its native state is of the non-conjugated double-bonded type at approximately 400° F., adding 1.5 to 2.5 pounds of a polycarboxylic acid per each 100 pounds of resin, and heating to approximately 550° F., and then adding to the reaction product drier and thinner.

9. The method of making a wrinkle composition which consists in heat reacting oil-soluble resin selected from the group consisting of run natural resins requiring running for the production of oil solubility, rosin-modified alkyd resins, and phenol-aldehyde resins which do not evolve formaldehyde and water on cooking with drying oil and unblown drying oil which in its native state is of the non-conjugated double-bonded type at approximately 400° F., adding 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin and heating to approximately 550° F., and then adding to the reaction product cobalt drier and thinner.

10. The method of making a wrinkle composition which consists in heat reacting rosin-modified phenol-aldehyde resin and unblown drying oil which in its native state is of the non-conjugated double-bonded type at approximately 400° F., adding 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin and heating to approximately 550° F., and then adding to the reaction product drier and thinner.

11. The method of making a wrinkle composition which consists in heat reacting rosin-modified phenol-aldehyde resin and unblown drying oil which in its native state is of the non-conjugated double-bonded type at approximately 400° F., adding 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin, and heating to approximately 550° F., and then adding to the reaction product cobalt drier and thinner.

12. The method of making a wrinkle composition which consists in heat reacting rosin-modified phenol-aldehyde resin and unblown perilla oil at approximately 400° F., adding 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin and heating to approximately 550° F., and then adding to the reaction product a top drier and thinner.

13. The method of making a wrinkle composition which consists in heat reacting rosin-modified phenol-aldehyde resin and unblown perilla oil at approximately 400° F., adding 1.5 to 2.5 pounds of a polycarboxylic acid per each 100 pounds of resin and heating to approximately 550° F., and then adding to the reaction product a top drier and hydrocarbon solvent.

14. The method of making a wrinkle composition which consists in heat reacting 100 to 125 pounds of rosin-modified phenol-aldehyde resin with 12 to 20 gallons of unblown drying oil which in its native state is of the non-conjugated double-bonded type at approximately 400° F., adding 1.5 to 2.5 pounds of maleic anhydride, and heating to approximately 550° F., and then adding to the reaction product from 0.75 to 1 gallon of cobalt drier solution and from 22 to 30 gallons of thinner.

15. The method of making a wrinkle composition which consists in heat reacting from 100 to 125 pounds of rosin-modified phenol-aldehyde

resin with 12 to 20 gallons of linseed oil at approximately 400° F., adding from 1.5 to 2.5 pounds of maleic anhydride and heating to approximately 550° F., and then adding to the reaction product from 0.75 to 1 gallon of cobalt drier solution and from 22 to 30 gallons of hydrocarbon solvent.

16. A wrinkle composition consisting of the heat reaction product of from 100 to 125 pounds of rosin-modified phenol-aldehyde resin, from 12 to 20 gallons of unblown drying oil which in its native state is of the non-conjugated double-bonded type and from 1.5 to 2.5 pounds of polycarboxylic acid in admixture with from 0.75 to 1 gallon of cobalt drier solution and from 22 to 30 gallons of hydrocarbon solvent; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the polycarboxylic acid and heating to approximately 550° F.

17. A wrinkle composition consisting of the heat reaction product of from 100 to 125 pounds of rosin-modified phenol-aldehyde resin, from 12 to 20 gallons of unblown perilla oil and from 1.5 to 2.5 pounds of maleic anhydride in admixture with from 0.75 to 1 gallon of cobalt drier solution and from 22 to 30 gallons of hydrocarbon solvent; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the maleic anhydride and heating to approximately 550° F.

18. A wrinkle composition consisting of the heat reaction product of rosin-modified phenol-aldehyde resin, linseed oil, and 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin in admixture with a top drier and thinner; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the maleic anhydride and heating to approximately 550° F.

19. A wrinkle composition consisting of the heat reaction product of rosin-modified phenol-aldehyde resin, linseed oil, and 1.5 to 2.5 pounds of maleic anhydride per each 100 pounds of resin in admixture with a top drier and hydrocarbon solvent; the composition having been produced by first heating the mixture of oil and resin to approximately 400° F., then adding the maleic anhydride and heating to approximately 550° F.

WILLIAM A. WALDIE.

No. 11,475

BRIEF FOR APPELLANTS

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

United States Court of Appeals
For the
District of Columbia Circuit

FILED NOV 14 1952

Stewart
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NEW WRINKLE, INC., and WILLIAM A. WALDIE,
Appellants,

vs.

ROBERT C. WATSON
~~JOHN A. MARZALL~~, Commissioner of Patents,
Appellee.

**Appeal from the United States District Court
for the District of Columbia**

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No. 11,475

STATEMENT OF QUESTIONS PRESENTED

Where the statement of the invention of the patent application (PX 1, App. 81A) shows that the invention consists of a novel composition of matter which, when added to a non-wrinkling oil or varnish at a particular high temperature range, that it (a) reacts internally, and (b) reacts with the oils in order to obtain the unexpected result of a harder wrinkle finish and the prior art does not show this composition of matter or the timing of such a composition at a particular temperature as an additive to non-wrinkling oils to make them wrinkle, the following questions arise:

> (1) Was it error for the Court to hold that a novel composition of matter which reacted internally when it was subjected to mixture with the oil at defined temperatures of the oil at which point it was fulfilling its usefulness and also reacted with the oil to produce an unexpected, new result, was aggregative?
>
> *Answer*: No, it was not aggregative because when it was put to its normal use there was a chemical cooperation between its elements internally and a chemical cooperation with the non-wrinkling oils to produce a novel result which was unexpected and could not be predicted: there is no prevision in chemistry. *Corona v. Dovan*, 276 U. S. 358, 368-9; *Goodyear Co. v. Ray-O-Vac Co.*, 321 U. S. 275; *Leeds & Catlin Co., v. Victor Talking Machine Co.*, 213 U. S. 325.
>
> (2) Was it error for the Court to hold that the dry, powder composition for use as a wrinkle catalyst, which no single prior art patent showed, was old per se and that the use of such a catalyst in a non-wrinkling oil, which no prior art patent showed, to produce a hard wrinkle, was not invention and *was anticipated by combining fragments of the prior art?*
>
> *Answer*: No, in chemical cases where an unexpected result is secured by new combinations and

methods of old elements which could not be predicted except by actual practice, the inventions in the catalyst and in the method of using the catalyst, are not anticipated where no single prior art patent was found to teach the combination and method producing the new and unexpected result, even though fragments could be picked out of different prior patents. *Corona v. Dovan,* 276 U. S. 358, 368-9; *Goodyear Co. v. Ray-O-Vac Co.,* 321 U. S. 275.

(3) Is it invention to do simultaneously that which has been done previously successively?

Answer: Yes. *American Wood Paper Co. v. Fiber Disintegrating Co.,* 23 Wall. 604; *Kuehmsted v. Farbenfabriken of Elberfeld Co.,* 179 Fed. 701, 702-5 (7 C.A.).

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United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 11,475

NEW WRINKLE, INC., and WILLIAM A. WALDIE,
Appellants,

vs.

JOHN A. MARZALL, Commissioner of Patents,
Appellee.

Appeal from the United States District Court for the District of Columbia

BRIEF FOR APPELLANTS

JURISDICTIONAL STATEMENT

1. This appeal arises under U.S.C.A. Title 28, § 1291. Jurisdiction is admitted.

2. Bill of Complaint is for issuance of a patent (App. 2A), in accordance with the provisions of U.S.R.S. § 4915, U.S.C.A. Title 35, § 63, for the invention specified in claims 1-11 (App. 5A-7A) of the application of William A. Waldie, Serial No. 653,932, filed March 12, 1946.

The Answer of the defendant-appellee averred that the application, Ser. No. 653,932, had been duly prosecuted before the tribunals of the United States Patent Office; that claims 1-11 of the application were refused by the Primary Examiner of the Patent Office on the grounds that the claims lacked patentable novelty over the prior art patents to Waldie, No. 2,392,346 in view of the Root patents, Nos. 1,883,408 and 1,950,417; that claims 5-8 were too broad, and that claims 1-11 were aggregative; that the Patent Office Board of Appeals reversed the Examiner on his rejection of claims 5-8 as too broad and reversed the Examiner that claims 5-11, inclusive, are aggregative. The Patent Office Board of Appeals affirmed the decision of the Examiner of the rejection of claims 1-11 as being not patentably distinct from the prior art; and further admits that the Commissioner of Patents refused and still refuses to issue the patent sought.

3. The judgment of the District Court with memorandum opinion (App. 13A) dated February 11, 1952, directed that the Complaint be dismissed.

4. Notice of Appeal to this Court was filed March 7, 1952 (App. 16A) from the said judgment and a copy of the Notice of Appeal was served on appellee on April 3, 1952 (App. 17A).

5. By stipulation of the parties the transcript of the record on appeal, together with the contents, has been filed in the Office of the Clerk of the United States Court of Appeals for the District of Columbia, and includes a designation of the contents of the record on appeal (App. 25A).

STATEMENT OF THE CASE

The instant invention relates to a "Wrinkle Catalyst", a novel composition of matter in the form of a dry powder which, when mixed with non-wrinkling oils, that would not produce a wrinkle finish normally, at predetermined temperatures **during the course of the making of an oil varnish,** performs two functions: (a) the wrinkle catalyst reacts between its components as intended, and (b) also reacts with the oil to bring about a wrinkling oil that gives a hard and very firm wrinkle as an industrial finish coating.

No prior art patent shows this catalyst. No prior art patent shows a catalyst introduced in the course of the heating of the oils to make a varnish with a resin which will react with the non-wrinkling oils to provide a hard wrinkle finish and will react internally with itself to provide a new chemical composition. (App. 13A)

The economic significance of this accomplishment is not only in securing the long desired hard wrinkle, but in being able to substitute non-wrinkling oils that are cheap and available in the United States, for the expensive China or tung oils that are mainly imported from China and are difficult to secure in view of the possession of that country by the Communists.

Wrinkle finish compositions normally contain as minimum constituents a resin, an oil, a solvent or diluent and a metallic drier. **The oil normally utilized in such compositions has a capacity for producing wrinkling and an example of such an oil is china-wood or tung oil.** This scarce oil is imported from China and, accordingly, it has become urgent in recent years to replace it in view of restrictions on exports from that country due to wars.

The objective of this research, as stated by the witness Waldie, **was to secure a substitute for the imported wrinkling oils such as Chinese tung oil.** (App. 65A)

The attack on the problem involved the production of a composition powder which could be added in the processing of an available varnish or an available non-wrinkling oil to produce a wrinkling composition by modifying the properties of the oil or of the oil of the varnish (App. 66A) to secure the long sought result of a much harder wrinkle finish.

The Invention

The Waldie invention lies in the discovery of a **dry** texture modifying powder composition which may be added to a coating composition **with ordinary oils having non-wrinkling properties for the purpose of converting the non-wrinkling coating composition to one having wrinkling properties, without using scarce and expensive oils.**

This transformation is occasioned by heat processing of the coating composition with the powder composition therein. The powder mixture, that is, the dry powder material of the invention, comprises from 1 to 4 parts by weight of an oil reactant selected from the group of chemicals consisting of maleic acid, maleic acid anhydride and fumaric acid and 1 part by weight of a texture producer selected from the group of chemicals consisting of manganese borate, cobalt acetate and lead oxide.

Thus, the texture modifying catalyst may comprise maleic anhydride and cobalt acetate intimately mixed together in a dry powder form (PX 5). Such a powder is incorporated into a non-wrinkling oil or a non-wrinkling varnish base to attain the wrinkling composition of invention (PX 11), **during the process of cooking at a time of high temperature.**

In the practice of the invention the powder is added to the non-wrinkling oil or to the non-wrinkling varnish **while the latter is at a temperature of from 350° to 420° F.**

Then the temperature of the mixture is raised to between 590° F. to 600° F.; thereafter the composition is cooled (PX 1, Spec. 3). After this composition is cooled it is thinned to the desired consistency by the use of commercial solvents. The oil composition which is the result of the above noted process (App. 53A) is a wrinkling composition, and accordingly the process of invention **has resulted in the production of a wrinkling composition from a non-wrinkling oil simply by the addition of the modifying powder of this invention.**

As testified to by the witness Waldie (App. 71-2A), the cobalt acetate-maleic anhydride in the presence of the oil and the oil under the influnce of the heat is affected **by the formation in situ of cobalt maleate.** This is substantiated by the fact that the quantity of fuming and expulsion of material from the kettle during the cooking is considerably less (App. 64-5A, 72A) when the reaction is carried out as indicated above, than if simply maleic were added to the hot oil or varnish.

This dry texture powdered composition known as a "Wrinkle Catalyst" is composed of (1) an oil reaction, that is, maleic acid, maleic acid anhydride or fumaric acid; and (2) a wrinkling element, that is, manganese borate, cobalt acetate or lead oxide, which acts as a drier to modify the texture. The Court so found (App. 13A).

The Court found that this mixture reacted as a combination upon itself and between its elements upon being added to the heated oil, saying "The oil reactant and the texture producer react with each other upon being added to the heated oil." (App. 13A)

The Court thus finds in fact that this composition does have its elements react upon one another as well as upon the non-wrinkling oils as the Court said: "Basically then this alleged invention is the art of taking an oil reactant and a texture modifier (drier) and adding them as a unit to a heated non-wrinkling oil." (App. 14A) **This is a true chemical combination and invention—not aggregation.**

The Court held that this wrinkle catalyst which he finds does react in its components upon each other was a mere aggregation, contrary to law as set forth hereinafter.

The Court further finds that when this wrinkle catalyst was introduced in the midst of the process of heating a non-wrinkling oil at predetermined temperatures discovered by the inventor without waiting for the reaction of heating to be completed, it immediately converted the cheap non-wrinkling oil into a wrinkling oil which would take the place of the scarce and expensive tung oils, etc.

The Court found that this was not invention, contrary to law, (see later authorities) saying "What the plaintiffs have done is add to a non-wrinkling oil or varnish simultaneously that which previously had been added sequentially." (App. 15A)

The Court admitted that the unrebutted record showed that "Plaintiff Waldie did testify that as a result of adding the oil reactant and the texture modifier as a unit, he produced a harder finish and a firmer wrinkle," (App. 15A), and then added which has no support in the record, "but there was no showing that the product produced by him under the method of his application is substantially different from that produced under the prior art." (App. 15A)

The legal error of the Court was in the fact that getting a harder wrinkle was only one result and a lesser one than the primary proposition of being able to convert a non-wrinkling oil into a wrinkling oil **while the cook was going on** resulting in a great economy in manufacturing.

The Court was, therefore, in error as a matter of law where it said: "Where the result accomplished is substantially the same, steps taken concurrently or simultaneously are the equivalent of and not patentable over steps taken successively." (App. 15A), which, in the law on invention in chemistry is untrue; and is contrary to the authorities elsewhere stated. It was this fallacious legal reasoning that led the Court into a result that is contrary to law.

For instance, the Court said as to the catalyst "This powder is prepared by mixing the acid and drier together. There is no showing that there is a chemical combination of these substances in the chemical mixture. (App. 15A) **But in the beginning of his opinion he also found to the contrary that "The oil reactant and the texture producer react with each other upon being added to the heated oil."** (App. 13A) It shows that the catalyst mixture does react when it is put to use and is, therefore, a patentable chemical mixture. As elsewhere stated, as a matter of law, where a reaction takes place of a catalyst internally and externally, it is invention over performing the additions separately at different times with no reaction between them.

The Court found that the claims to the catalyst were aggregative contrary to law.

The Court found that the acid component of the catalyst and the drier component were known—that they could be used in wrinkle finish compositions, one of which was the instant inventor's own patent over which he has made this improvement and the other by another worker in the art. But it was not until the inventor Waldie took **the new and unexpected step** of combining them **with the new function of internal reaction on one another at the same time they reacted with the non-wrinkling oil to produce a wrinkling varnish from a non-wrinkling oil.** This is invention as hereinafter stated.

The film produced upon application of the composition which involves this chemical reaction is harder than other films—the result sought and long desired in addition to making it possible to use cheap oils readily available in the United States.

Diversity of Opinion in Patent Office and in the Court.

The Examiner rejected the eleven claims on the grounds of being aggregative. The Board of Appeals disagreed with him as to claims 5-11. (App. 173-4A)

No Single Prior Art Patent Could be Found to Anticipate.

The Court found that no single prior art patent showed the combination of the catalyst as a unit. (App. 15A) No prior art patent, singly or in combination showed the **simultaneous use** of all elements of the catalyst **in the middle** of the cooking of the varnish instead of at the end. And the Court found that no single prior art patent or combination showed the composition of the catalyst which would internally react in the presence of the heated oil and externally react with the non-wrinkling oil. (App. 13A, 15A)

The Court's opinion, **on its face,** is contrary to law as elsewhere set forth in the argument.

You cannot defeat a new chemical composition of matter internally reactive by finding the elements in various separate patents not combined together and not internally reactive nor reactive as a composition of matter with non-wrinkling oils to produce a wrinkling varnish. Both as a matter of law this cannot be done and as a matter of common sense. The Supreme Court of the United States and subordinate Courts of Appeal have long held **that there is no prevision in chemistry** and the **experimenter** who accomplishes a result in a better manner or a new result is entitled to have the presumption in his favor.

Congress has just reaffirmed this in the new Patent Codification Act, Title 35, Patents, U.S.C. § 103, saying:

> "Patentability shall not be negatived by the manner in which the invention was made."

THE CLAIMS

The claims of this Waldie application are 1-11 (App. 5-7A) and may, for convenience, be divided into three groups as set out in the memoranda opinion:

(1) Claims 1-4, inclusive, directed to a dry composition of powders constituting a texture modifying **wrinkle catalyst** for use as an additive to make non-wrinkling oils wrinkle.

(2) Claims 5, 6, 7 and 9 defining either a **non-wrinkling oil or a varnish composition** which dries to a wrinkle finish after the composition comprising the wrinkle catalyst of claims 1-4 is added to it; and

(3) Claims 8, 10 and 11 which define a **method** of converting either the non-wrinkling oil or the non-wrinkling varnish to a wrinkling oil or wrinkling varnish by a two-stage heating process, the texture producing catalyst being added at defined temperature stages; and reacted at higher temperatures after the catalytic addition.

STATEMENT OF POINTS

The Statement of Points of the plaintiffs-appellants on its appeal will be found in the record at App. 21-22A. We will not repeat them here. To sharpen the issues for the Court we state the fundamental issues in these points as follows:

I. There is no prevision in chemistry. The combination, not shown by the prior art, of the elements of a catalyst which are internally reactive when put to work and externally reactive when put to work **are not aggregative.**

II. **Such a catalyst is not anticipated by proving that its elements as independent non-reactive elements have been used in the prior art separately and successively without interaction.** As a matter of law the making of a new combination with new chemical interactions is invention: and changing the timing, method of use and chemical interaction is invention.

III. The art does not anticipate the use of a catalyst combination internally reactive and externally reactive on a non-wrinkling oil to provide a wrinkling oil, admitted by the Court and to be shown in any one prior art patent or any combination thereof, introduced in the midst of the process of making the wrinkling varnish, is itself invention in chemistry as **producing a new method in a continuous process instead of independent, sequential steps.**

SUMMARY OF ARGUMENT

The claims of the application are patentable because the addition of the texture modifying powder to the hot oil and the raising of the temperature thereafter involve, as testified to by the witness Waldie, a new chemical reaction between the elements of the powder catalyst and the catalyst and the oil. (App. 72A, 77A) That a chemical reaction takes place is evidenced by the difference in behavior when the claimed mixture is added to the hot oil—for, as the witness Waldie testified, upon the addition of the mixture to the hot oil very little fuming occurs. (App. 72A)

In contrast thereto upon the addition of a reactant alone as in the Waldie patent, the maleic anhydride tends to go out of the oil. (App. 72A) Further evidence that a different reaction takes place when materials are added to the mixture is indicated by the harder film attained from varnish compositions employing this method in contrast to the method of, for example, the Waldie patent.

As the witness Waldie testified in response to a question from the Court (App. 41A), that the **resultant**

material attained in this invention is of the same general nature as the prior art, should not mitigate against patentability, for **it is to an improvement of the known prior art that the invention is directed.**

The improvement involves (1) a new end product, the harder wrinkle finish, long sought; (2) a new method for the conversion of non-wrinkling oils and non-wrinkling varnishes to wrinkling compositions; and (3) a new wrinkle catalyst.

Where such factual differences in the art exist is evidence of invention has long been held by the courts and by the Patent Office itself. *Ex parte Merritt,* 37 U.S.P.Q. 88; *Goodyear Co. v. Ray-O-Vac Co.,* 321 U. S. 275.

The Court held that the claims 1-4 were aggregative and therefore unpatentable. This is untrue as a matter of fact and law. The position of the Court **that there is no** showing of a chemical combination in the mixture; nor of any new function or effect by association with the mixture which invalidates the claims is in error as a matter of law. *Goodyear Co. v. Ray-O-Vac Co.,* 321 U. S. 275; *Leeds & Catlin Co. v. Victor Talking Machine Co.,* 213 U. S. 325.

There is no requirement that a reaction take place in the dry powder state itself in order to render the claims patentable. *Goodyear Co. v. Ray-O-Vac Co.,* 321 U. S. 275; *Danbury & Bethel Fur Co. v. American Hatters Co., Inc.,* 54 F. (2d) 344, 346 (2 C.A.).

On the contrary, it is only necessary that the end use of the powder bring a new composition and a new result take place. That such cooperation does take place is supported by the testimony of the witness Waldie relative to the fuming during the cooking process and by the fact that a harder product has been attained: and this was not rebutted.

The basic error of the Court was to believe a composition of matter must have its elements co-act when inactive. That is not the law. If that were so you could not patent gasoline, explosives, plastics, etc.

The second basic error of the Court was to overlook the fact that the composition of matter did react as soon as it was put in the hot oils by:

(a) the elements of composition powders reacted on each other; and

(b) the elements reacted with the hot oil as a "Wrinkle Catalyst" **in the midst of a continuous process.**

There is nothing like that in this art.

The third basic error of the Court was to combine two patents to make out anticipation when their sum total did not equal all that the inventor did in this case, on the ground all that was done simultaneously was previously done successively—factually and legally untrue.

Accordingly, it is submitted that the holding of aggregation is without merit and that the claims are patentable under the facts and the law.

ARGUMENT

In Law There Is No Such Thing as a "Reasonable" Basis for Rejection of Claims.

The findings of the District Court that the prior art is a "reasonable" basis for the rejection of the claims is not sustainable in fact or in law.

We do not know what the Court means by "reasonable". If it means that the District Court substituted its judgment for the expert opinion of chemists by stating that it would not take invention to combine the Root patents and the Waldie patent, then as a matter of fact as well as law there is no basis, reasonable or otherwise, for the Court's finding as you will note from the following statement, supported by your examination of the prior patents, that even if the assumptions of the Court were true that this was only a matter of putting together from prior patents in one package what had been used for the same purpose as separate elements successively, you would still have invention under the law.[1]

That is not the fact here; and, even if it were the fact, it would not be good law in a chemical case to find anticipation because it is invention to discover how to make the composition internally react and externally react simultaneously.

The Claims and the Prior Art.

Claims 1-4 of this application are directed to a dry texture modifying powder comprising an oil reactant and a texture producer in a specified range of proportions. The prior art relied upon by the Court in the memoranda opinion is the Waldie patent No. 2,392,346, Root patent No. 1,883,408 and Root patent No. 1,950,417, all owned by the same assignee.

This prior art does not show or suggest the powder mixture defined by the claims; the art does not teach that such a mixture has any utility whatsoever.

More specifically, neither of the Root patents teach any reactant at all, that is, they do not refer to maleic acid, maleic acid anhydride or fumaric acid. While Waldie No. 2,392,346 employs a reactant and a drier (texture producer), **he does not teach a mixture of the**

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[1] *Goodyear Co. v. Ray-O-Vac Co.*, 321 U. S. 275; *American Wood Paper Co. v. Fiber Disintegrating Co.*, 23 Wall. 604.

two, nor does the Waldie patent suggest that the mixture would have any utility.

Since the Root patents do not contain the reactant they cannot supply this missing important teaching. Therefore, claims 1-4 are distinct from any combination of the art as relied upon by the Court.

Since the powders defined in these claims 1-4 enable (1) the transformation of a non-wrinkling oil or a non-wrinkling varnish to a wrinkling composition; and (2) the production of harder films, the criterion of invention has been clearly met.

Ever since *Ex parte Bucy,* 51 U.S.P.Q. 533, 534, (Patent Office Board of Appeals), it has been held that claims are allowable where the **order of use** of the ingredients has been changed to secure an improved product. It was therein stated:

> ". . . None of the references teaches that premixing of a resin and wax into a homogeneous melt before adding the other ingredients has any effect on the moisture proof characteristics of the coating material. . . . If the product is improved we see no reason for refusing claims to the product for the reasons given by the examiner."

It is submitted that in the present case precisely similar considerations are involved and that the claims are allowable on the facts and the law.

Claims 5-11 relate to oil and varnish compositions which include the texture modifying powder of claims 1-4, and the process of making these compositions. The process claims are specifically limited to the addition of the powder to an oil, for example, at a temperature of between 350° F. to 420° F. No such step is shown in the Waldie or Root patents. In neither Waldie nor Root is the powder, which comprises an oil reactant, and a texture producer in contact with the oil at the temperature indicated.

It is this step which as testified to by the witness Waldie results in the composition (claims 5, 6, 7 and 9) which, when sprayed, yields a harder wrinkle finish product. This step occasions the reaction, the beneficial result of which is the complete taking up of the powder in the oil (App. 71-72A).

That this is critical may be noted from the testimony before the Court that the addition of the powder separately, that is not a mixture although at the same time, would not attain the product of invention because the maleic anhydride would tend to volatilize off before the cobalt acetate had been taken up (App. 77A). Similarly, the witness testified that if the cobalt acetate and maleic anhydride, which are respectively a texture producer and an oil reactant, would themselves have reacted prior to the addition of the oil, that the same result would not be attained as in this invention, because the product would be of no practical use. (App. 74A)

The Court failed to consider this testimony of the witness when the Court stated that there was no showing that the product produced by the inventor under the method of this invention is substantially different from that produced by the prior art.

It is submitted that the failure to take into cognizance and specifically set out the considerations with respect to this testimony was error; and it is further submitted that the facts clearly indicate the difference between claims 5-11 of this application and the teachings of the prior art.

THE LAW ON PATENTABILITY IN A CHEMICAL CASE OVER THE PRIOR ART:

There is no prevision in chemistry which enables a Court to dogmatically state that a new chemical combination is the same as its independent element successively used.

In connection with the patentability of claims 1-11 over the art, it is to be noted that the courts have consistently held that where a chemical reaction is involved and a different result is produced, that is evidence of patentability. For example, in *United Chromium, Inc. v. International Silver Co.*, 53 F. (2d), 390, 393 (D.C. D.Conn.) the Court states as follows:

> ". . . But, inasmuch as a chemical action is involved here, analogy does not go a long way, because, while one can predict with confidence in mechanics in some instances, and in some cases where mathematics can be applied, in chemistry one almost entirely fails. In chemistry one cannot anticipate a result. A result may be obtained only by experiment."

Also in *Corona Cord Tire Co. v. Dovan Chemical Corporation*, 276 U. S. 358, 368-9, the Court said:

> ". . . The catalytic action of an accelerator can not be forecast by its chemical composition, for such action is not understood and is not known except by actual test."

Similarly, in *General Electric Co. v. Laco-Philips Co.*, 233 Fed. 96, 103 (2 C.A.), the Court said:

> "Chemistry is essentially an experimental science, and chemical prevision is as impossible today, in spite of the accumulation of the great knowledge, as it was in former times. . . ."

In *Naylor v. Alsop,* 168 Fed. 911 (8 C.A.), the Court said:

> "It should also be borne in mind in considering this subject that reasoning by analogy in a complex field like chemistry is very much more restricted than in a simple field like mechanics. This distinction has been frequently recognized by the Courts." (p. 919)

Again it stated in *Donner v. Sheer,* 64 F. (2d) 217 (8 C.A.) as follows:

> ". . . He was the first to perceive that certain colloids or colloid-like substances were capable of acting as a vehicle to hold the depilating agents in stable suspension and thus to produce a more satisfactory depilatory than any yet offered to the public." (p. 223)

And in *Aeration Processes, Inc. v. Lange et al,* 196 F. (2d) 981 (8 C.A.) the Court said:

> ". . . He chose the nitrous oxide by the kind of intuition which is inventive genius in the field of chemistry where there is no pre-vision and only actual test is demonstrative. Corona Cord Tire Co. v. Dovan Chemical Co., 276 U.S. 358, 48 S.Ct. 380, 72 L.Ed. 610; Naylor v. Alsop Process Co., 8 Cir., 168 F. 911. This is a 'chemical case' notwithstanding that practical inertness of the chemical instead of radical change in it was desired and attained in the process, and Getz was the original inventor of the process for making commercial whipped cream by the use of the particular chemical.
>
> "The court erred in holding his process patent invalid." (p. 984)

It is submitted that the decisions in these cases establish that where a chemical action, as in the present case, is under consideration that there can be no predictability of results; that the law establishes that where an improved product has been attained that the criteria of invention are present.

THERE IS NO AGGREGATION CAUSING UNPATENTABILITY WHERE A COMPOSITION OF MATTER INTERNALLY REACTS AND EXTERNALLY REACTS AS A CATALYST WHEN IT IS PUT TO USE.

The error of law of the Court was in finding that because the powder elements of the composition of matter of claims 1-4 did not react immediately after they were put together, but only reacted with one another and with the non-wrinkling oil when introduced under certain temperatures which caused them to start functioning, was aggregation.

Aggregation is where two plus two equals four; invention is where two plus two react on one another to produce five.

The District Court itself found in its opinion that this composition of matter did react chemically saying: "The oil reactant and the texture producer react with each other upon being added to the heated oil." (App. 13A) For instance, a mixture of powder to form a high explosive is a chemical combination and just because it does not explode immediately upon mixing is no reason why it is not a novel explosive; and your automobile is still a patentable combination as in the engine despite the fact that when it is at rest the parts are not cooperating with one another and it takes the gasoline to bring about the functioning of the combination. But no one would think of holding that a new combination of parts in an engine is aggregation just because when it is at rest the parts are not reacting one against the other or with each other, but such is the fallacious reasoning of the Learned Court below.

With respect to the holding that claims 1-4 are unpatentable as being an aggregation of materials in which no chemical action takes place in the mixture, it is pointed out that this is clearly error. It is not essential that the chemical action be in the mixture itself, **it is only necessary that the chemical action take place when the mixture is put to its intended use.**

In the present case the texture modifying powder defined by claims 1-4 placed in the oil at a temperature of between 350° F. to 420° F. and thereafter heated to 590° F. to 600° F. resulted in a completely new material. Accordingly the decision of the Patent Office Board of Appeals in *Ex parte Merritt,* 37 U.S.P.Q. 88, is considered in point for therein the Board stated:

> "... **If, when a composition of matter is put to its intended use, there is a coaction** between the various ingredients to produce the intended result, which is something more than the mere aggregate of the individual functions of the ingredients, **we think a** proper combination is presented." (p. 89)[1]

It is accordingly clear that the holding that the claims are unpatentable on the ground of aggregation is an error of law.

That this is the law is further supported by the statement in *Danbury & Bethel Fur Co. v. American Hatters & Furriers Co., Inc.,* 54 F. (2d) 344, 346 (2 C.A.), where the Court said:

> "... The test is whether the combination produces a new result or an old result in a better way. Webster Loom Co. v. Higgins, 105 U.S. 580, 26 L.Ed. 1177. ..."

On aggregation, the Supreme Court of the United States in *Goodyear Co. v. Ray-O-Vac Co.,* 321 U. S. 275, involving chemical reactions, held the patent valid where the patentee combined old features known to the prior art which produced a new result in a new and successful manner saying that this interaction of the parts was invention.

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[1] Emphasis ours unless otherwise stated.

This was the rule laid down in *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U. S. 325, that a combination regardless of whether the elements were old or new was invention when it cooperated as a single unit. It is not denied that Waldie's catalyst combined with the non-wrinkling oil did react and out of the coacting substances and oils the harder wrinkle of a new character resulted. This is invention.

DISTRICT COURT ERROR OF LAW:

It is invention to do simultaneously what was formerly done successively.

The District Court summed up the real basis for his erroneous decision with these statements:

> ". . . What the plaintiffs have done is add to a non-wrinkling oil or varnish simultaneously that which previously had been added sequentially. . . . Where the result accomplished is substantially the same, steps taken concurrently or simultaneously are the equivalent of and not patentable over steps taken successively." (App. 15A)

Those statements are not true as a matter of law. The last statement is untrue as a matter of fact because the record in this case shows the fundamental differences as stated above and the new results obtained by performing the operation simultaneously instead of successively.

The Supreme Court has had this precise question of whether it is invention to do simultaneously what formerly was done successively. In *American Wood Paper Co. v. Fiber Disintegrating Co.*, 23 Wall. 604, the Court said:

> "The use of caustic alkali in reducing vegetable substances to paper pulp was no novelty. Neither was boiling under pressure. But **a process combining those things with a certain specified arrangement of the strength and quality of the alkaline solution, and a defined regulation of the heat and pressure, may well have been patentable** if it had no other novel result than the production of paper pulp more economically."

SIMULTANEOUS CHEMICAL REACTION DIFFERENT FROM SUCCESSIVE OR SEQUENTIAL CHEMICAL REACTION.

The composition of matter used as the catalyst in this case is wholly different from the independent chemicals used separately. It is not claimed that the independent chemicals used separately had a catalytic action. As Mr. Chief Justice Taft said in *Corona v. Dovan,* 276 U. S. 358, 368-9:

> "The catalytic action of an accelerator can not be forecast by its chemical composition, for such action is not understood and is not known except by actual test."

As the Supreme Court said in *Minerals Separation v. Magma Co.,* 280 U. S. 400, 403:

> ". . . There is no 'of course' as to what nature can do except as proved by observation and experiment. . . ."

This specific question of a difference in using a chemical at one place as being invention over using it at another place was held to be invention in *Kuehmsted v. Farbenfabriken of Elberfeld Co.,* 179 Fed. 701, 702-705 (7 C.A.). The Hoffman patent for acetyl salicylic acid was sustained as being valid over the art **even though** the difference over the art was only one of purification involving recrystallization in dry chloroform. The Court said:

> "But assuming that the compounds, chemically, are not different—that the two bodies are analytically the same—Hoffman's recrystallized product is therapeutically different from the Kraut and antecedent products in the following undisputed particulars: . . ." (p. 704)

And the Court then held that the environment and time of combination in which the chemicals reacted being differently used gave a patentable difference saying:

> ". . . In the Hoffman product **all the salicylic acid is held entirely in bond while passing through the stomach, where it would do harm, and is set free in the intestines, where its utility as a therapeutical agent is rendered effectual**—the acetyl molecule or radical, unaffected by the acid fluids of the stomach, being split off or set free by the alkaline fluids of the intestines—thus making the Hoffmann product practically effective and safe in its therapeutical results as against what previously had been undesirable or unsafe, if effective at all, in therapeutics.
>
> ". . . In the one case the mass is made to yield something to the useful arts; in the other case what is yielded is chiefly interesting as a fact in chemical learning. Merrill v. Yeomans, 94 U.S. 569, 24 L.Ed. 235; Badische v. Kalle, 104 Fed. 802, 44 C.C.A. 201 (C.C.A. 2d Circuit); Badische v. Klipstein (C.C.) 125 Fed. 543." (pp. 704-5)

The fact that in this case Waldie took chemicals the appellee claims are old, combined them and used them in a new environment with new timing at a new place in the reaction to trigger a new reaction is invention.

As Judge Learned Hand said in *Kirsch Mfg. Co. v. Gould Mersereau Co., Inc.*, 6 F. (2d) 793, 794 (2 C.A.):

> ". . . An invention is a new display of ingenuity beyond the compass of the routineer, and in the end that is all that can be said about it. . . ."

Mr. Chief Justice Taft in the *Corona v. Dovan* case, 276 U. S. 358, was careful to point out that the same chemicals **in that case** had already been used as accelerators but in a different environment and timing which constituted invention. That is the case here.

To the same effect was *Gilbert Spruance Co. v. Ellis-Foster Co.,* 114 F. (2d) 771 (3 C.A.), where a wood lacquer was directed to a varnish having a synthetic resin which was blended with nitrocellulose to create a new product. The Court held that the patentee had exercised creative faculty rising to invention in selecting what was available to all but the import of which had been grasped by none and had thereby created a new and useful result.

If the District Court's premise be true, which we deny, that these chemicals were old and had been used successfully, it was invention to perceive that they could be made to work together as a team, effect one another in a new manner under new conditions at a new time to get a wholly new result of a harder wrinkle out of a non-wrinkling oil.

We wish to make it very clear that in addition there were new results obtained, as pointed out above, that could not be obtained by successive operation.

CONCLUSION

It is, therefore, submitted that under the facts and under the law herein stated this Court should reverse the decision of the District Court and direct that the Commissioner of Patents should issue a patent on claims 1-11 inclusive, of the Waldie application, Serial No. 653,932.

Respectfully submitted,

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BRIEF FOR APPELLEE

United States Court of Appeals District of Columbia Circuit

APPEAL NO. 11475

NEW WRINKLE, INC., and WILLIAM A. WALDIE,
Appellants

v.

ROBERT C. WATSON
~~JOHN A. MARZALL~~, COMMISSIONER OF PATENTS,
Appellee

Appeal from the Judgment of the United States District Court for the District of Columbia

E. L. REYNOLDS,
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Of Counsel

Appeal No. 11475

STATEMENT OF QUESTIONS PRESENTED

In the opinion of appellee the questions presented by this appeal are:

(1) Whether appellants are entitled to a patent containing claims which define a mere mixture of chemicals known in the art as effective for the stated purpose, where the association thereof in the unitary mixture requires no unusual talent and produces no change in the compounds, and no coaction or change in their respective functions;

(2) Whether, where the prior art discloses essentially the same combination of oil and modifying materials as that defined in the claims sought, it is inventive in the process of compounding the composition to add the modifying materials as a single mixture instead of separately, as in the prior art.

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United States Court of Appeals
District of Columbia Circuit

Appeal No. 11475

New Wrinkle, Inc., and William A. Waldie,
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v.

John A. Marzall, Commissioner of Patents,
Appellee

Appeal from the Judgment of the United States District Court for the District of Columbia

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BRIEF FOR THE COMMISSIONER OF PATENTS

INTRODUCTION

This is an appeal from the judgment (16 A)* of the United States District Court for the District of Columbia dated March 7, 1952, dismissing appellants' complaint (2 A to 9 A) against appellee, the Commissioner of Patents, in an action under Section 4915 of the Revised Statutes (35 U.S.C. 63), Civil Action No. 2964-49, in which appellants sought to have the District Court issue an order authorizing the Commissioner to grant a patent containing certain claims of the Waldie patent application Serial No. 653,932, filed March 12, 1946, on an alleged invention in a "Wrinkle Catalyst". The complaint was dismissed because the claims sought did not define inventive or patentable subject matter.

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* Numbers in parenthesis refer to pages of the joint appendix.

Defendant Kingsland named in the complaint (2 A) was succeeded as Commissioner of Patents by John A. Marzall during the pendency of the action in the District Court, and said Marzall was timely substituted in his official capacity as party defendant (11 A).

THE APPLICATION

As stated by the trial court in the memorandum opinion (13 A), the alleged invention relates to the art of producing coating compositions which will create a wrinkle finish when applied to objects and dried, as by baking. The method of compounding the composition consists of adding a dry texture modifying powder to a non-wrinkling oil or varnish base that has been heated to a temperature of from 350° F. to 420° F., of then raising the temperature of the mixture to around 600° F., of then cooling the mixture to about 350° F., and finally adding thinner and drier (82 A). The modifying powder is composed of (1) an oil reactant selected from the group of compounds consisting of maleic acid, maleic acid anhydride and fumaric acid; and (2) a texture producer or drier selected from the group of compounds consisting of manganese borate, cobalt acetate and lead oxides (84 A, 85 A). A proportion of from 4:1 to 1:1 with regard to oil reactant and texture producer is said to yield satisfactory results (86 A). The powder may contain other additional ingredients, as, for example, dehydrating agents, such as bentonite or silica gel (86 A). The essence of the alleged invention is said to be the conversion of any non-wrinkling varnish into wrinkle finishes by the modifying powder composed at least of an oil reactant ingredient and one texture modifying substance (86 A).

THE CLAIMS

As pointed out by appellants (Br. 9), the claims in suit fall into three groups, as follows:

(I) Claims 1 to 4, inclusive, which define a dry mixture of the materials denominated a texture modifying powder;

(II) Claims 5, 6, 7 and 9, which define an oil or varnish composition which dries to a wrinkle finish, the composition comprising a non-wrinkling oil or varnish base and the texture modifying powder of claims 1 to 4; and

(III) Claims 8, 10 and 11, which define the method or process of converting or producing a wrinkling oil or varnish from a non-wrinkling oil varnish base, comprising a two-stage heating process, the modifying powder being added after the first stage.

THE PRIOR ART

The patent to Root, 1,883,408, granted October 18, 1932 (175 A-181 A) describes coating compositions of the varnish or enamel type which result in the production of wrinkle finishes, the compositions generally containing a wrinkling oil with admixtures of non-wrinkling oil, the latter being less than half of the oil mixture (p. 2, col. 2, lines 95-128). The non-wrinkling oil may be a raw oil, a blown oil or a boiled oil. Driers, such as cobalt acetate, red lead or manganese borate, are said to be important elements of the composition because the wrinkling effect is said to be determined to some extent at least by the rate of oxidation of the oil.

The later Root patent, 1,950,417, granted March 13, 1934 (182 A-189 A) describes essentially the same coating composition as that of the earlier patent, emphasizing the use of non-wrinkling oils, such as raw oils or boiled oils (p. 4, col. 2, lines 80-87). In addition, this patent describes the manner of compounding which includes heating of the oil and resin to disperse the latter in the oil, followed by the addition of part of the drier and further heating to 565° F., then cooling and adding additional oil and drier with heating to about 520° F., and finally reducing the temperature of the mixture to 390° F., and adding solvents, diluents and thinners.

The patent to Waldie, 2,392,346, granted January 8, 1946 (190 A-193 A) discloses a wrinkle varnish composition produced from oils such as unblown linseed oil (p. 1, col. 1, lines 45-50). Oil and resin are heated together to about 400° F. to disperse the resin therein, then maleic acid anhydride is added and the temperature of the mixture raised to about 550° F., and finally, after the mixture cools to about 400° F., solvent and drier, which may be cobalt or manganese compounds, are added (p. 1, col. 2, lines 7-22; p. 2, col. 1, line 74).

The publication "Uses and Applications of Chemicals and Related Materials" (137 A-149 A) shows that bentonite is in general use as a dehydrating agent, particularly for oils, and that it finds extensive use as a filler in paints and varnishes.

The "Condensed Chemical Dictionary" (150 A-160 A) shows that silica gel is commonly used as a dehumidifying and dehydrating agent.

SUMMARY OF ARGUMENT

1. Claims 1 to 4, inclusive, relate to a dry modifying powder which is no more than a mere mechanical mixture of two chemicals, maleic acid anhydride, called an oil reactant, and manganese borate, called a texture producer or drier. The powder is prepared by mixing and grinding together until a uniform mixture is obtained. There is no chemical combination or coaction of these substances in the mixture, and there is no function or effect brought about by their association in this manner. The individual materials are known to the art as effective in the formation of wrinkle finish compositions. There is no invention in their association or aggregation into a single mixture.

2. Claims 5, 6, 7 and 9 define the final oil or varnish composition which dries to a wrinkle finish. The composition defined as to its ingredients is essentially the same as that of the Waldie patent, which uses the same base oil and the same acid re-

actant, though a different drier, to produce a wrinkle finish composition. The specific driers being old in the art as evidenced by the Root patents, only the skill of the art, not inventive ingenuity, would be involved in utilizing the specific driers, old in Root, in the Waldie composition. The resultant improvement, if any, would be one of degree only, and not patentable.

3. Claims 8, 10 and 11 relate to the method of compounding the wrinkling composition from a non-wrinkling oil, which differs from the Waldie process only in the step of adding to the oil as a single mixture materials which had been added separately in the patented process. Since the final result, the wrinkling composition, is not new, differing from the prior art only in that a harder film might result, it is patentably immaterial that a single mixture of materials is used where the prior art utilized the same materials separately. The ultimate result being the same, namely, the conversion of a non-wrinkling oil to a wrinkling composition, the process claimed is non-inventive and non-patentable over the prior art processes.

4. Claims 5 to 11, inclusive, are unpatentable under R. S. 4888 for overclaiming.

THE ARGUMENT

Appellants seek to patent in the claims of group I supra, a mechanical mixture of the oil reactant and the texture producer or drier in a specified range of proportions. This mixture is denominated "a dry modifying powder for the conversion of non-wrinkle coating compositions to wrinkle coating compositions", and is prepared merely by mixing and grinding together the individual compounds. The trial court found that there was no showing that there is a chemical combination of these substances in the mixture, nor that there is any new function or effect brought about by their association (15 A). Clearly, there is here only a mechanical mixture or aggregation of the individual compounds. Such mixtures do not disclose an invention or discovery within the meaning of the patent statutes. Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U. S. 127; In re Trattner, 58 App. D. C. 355, 30 F. 2d 879; In re White, 17 CCPA 365, 39 F. 2d 974; In re Sussman, 30 CCPA 1107, 136 F. 2d 715.

Appellants' contention that the prior art does not show or suggest the powder mixture defined by these claims or that such a mixture would have any utility whatsoever (Br. 13) is without significance or materiality under the circumstances of this case. The trial court found that the components of the mixture are known to the art as effective in wrinkle finish compositions, the acid being shown in Waldie, and the texture producer or drier in Root (15 A). Further, appellants apparently admit that Waldie employs both a reactant and a drier (Br. 13), but not in admixture. So long as there is no chemical combination or coaction between the components of the mixture, nor any new function or effect brought about by their association or aggregation therein, it is of no patentable significance that the prior art does not describe the claimed mixture. Even apart from the prior art, there is no invention in mixing or bringing together substances, which in the mixture have no coaction or cooperative relationship producing a new, useful and different utility. In re Mason et al, 33 CCPA 1144, 156 F. 2d 189; In re Levin, 37 CCPA 791, 178 F. 2d 945.

Appellants further contend (Br. 11) that cooperation does take place as indicated in the testimony of the witness Waldie relative to the fuming during the cooking process (64 A), and by the fact that the witness stated that the mixture will give a harder film (59 A). Also, appellants assert that the mixture did react as soon as it was put into the hot oil by the elements of the mixture reacting on each other and by their reaction on the oil (Br. 12).

Apart from the fact that the alleged reaction of the elements of the mixture upon each other when added to the hot oil is something which is not described or disclosed in the application at bar, it having been advanced by the witness as a conjecture or speculation theory (50 A), and therefore is not pertinent in evaluating the alleged invention—Abbott v. Coe, 71 App. D. C. 195, 109 F. 2d 449—it is to be noted that this alleged reaction occurs at some future time and at and under special conditions, namely, when added to the oil maintained at a temperature between 350° F. and 420° F. Furthermore, since the alleged reaction product is said to be a cobalt maleate (50 A), which in and of itself is a drier, and since, even under this theory, the reaction results only in an increase in the amount of drier in the mixture, the ultimate mixture added is still nothing more than maleic acid and a drier. While the witness Waldie did mention that the films produced by the use of the claimed mixture were harder than those produced in his patent, attention is invited to Example V of the application at bar (84 A) which speaks of a film "not quite as hard" as that of Example IV. Clearly, the term is a relative one which, without a standard of comparison, denotes only a vague and indefinite difference in degree. It is submitted that such a difference is not the new result or function demanded by the authorities to justify a holding of invention. Where, as here, the claimed mixture utilizes ingredients separately old in the art for the same purpose and each of the ingredients imparts its customary and known effect in the mixture, the claims define only an aggregation which is non-inventive and non-patentable under the statute. Further, making such a mixture is the obvious thing to do, since it is common practice in many arts to provide dry mixes of old ingredients. In re Bates, 24 CCPA 998, 88 F. 2d 486; In re Parsons, 28 CCPA 743, 115 F. 2d 928.

Considering now the claims of group II (claims 5, 6, 7 and 9) which are directed to the oil or varnish composition, stated to dry to a wrinkle finish, the composition comprising a non-wrinkling oil or varnish base and the modifying powder of claims 1 to 4, it is submitted that these claims do not define invention over the Waldie patent, particularly in view of the Root patents. Clearly, Waldie in his patent discloses the production of a composition which dries to a wrinkle finish comprising a non-wrinkling oil to which is added maleic acid anhydride and a drier in the course of compounding the composition.

Admittedly, the base oil and the reactant of the patent are identical with those used in the instant case (57 A). Admittedly, a cobalt drier is used in the patented composition and a wrinkle finish is produced (58 A). The specific driers defined in the claims sought are disclosed in the Root patents as well recognized and old driers in this art. Since all the ingredients set forth in describing the claimed composition find full response in the composition of the Waldie patent, as modified or supplemented by the Root disclosure, it is submitted that the defined composition is not patentably new, the word "powder" being without any real significance in these claims, since it is admitted that the powder is completely taken up in the oil (Br. 15). Both the composition and its utility are fairly met by the prior art.

Appellants' brief contains no separate discussion of these claims, even though it was conceded that the claims fall conveniently into three distinct groups (Br. 9). The claims are grouped with the method claims of group III and all the arguments advanced relate to the method (Br. 14). Except for the fact that appellants state (Br. 6) that there is no support in the record for the holding of the trial court that "plaintiffs have not established that the product of the alleged invention is substantially different from that which was produced under the prior art" (15 A), there is no real challenge to this holding. Nowhere in the record or brief can there be found any positive statement that the final composition, the wrinkling composition, of the Waldie patent does not contain the same materials as are defined in the composition claims sought in this proceeding. Even if there be a difference in the process described in the patent and that of the application at bar, nevertheless, it is believed to be indisputable that the final composition of the patent contains substantially the same ingredients as those recited in these claims. Accordingly, since the claims are to be read separately from the specification—Graver Tank et al v. Linde Air Products Co., 336 U. S. 271—and the composition claims sought are not expressly limited to or by the process of formation disclosed in the specification, it is submitted that as worded these claims do not patentably distinguish over the prior art.

It should be noted at this point that claim 6 includes in the composition "a dehydrating agent", which according to the specification (86 A) is either bentonite or silica gel. Although the tribunals below, and appellants did not comment upon this limitation of the claim, attention is directed to the fact that the use of these materials for that purpose is old in the art. As shown by the publication of record, bentonite finds application in many fields, and is in general use as a dehydrating agent (142 A), being of particular utility for that purpose in fats and oils (143 A); while silica gel is likewise used extensively as a dehumidifying and dehydrating agent (155 A). In the light of these additional references, it is submitted that the addition of such materials to Waldie's patented composition, if found desirable or necessary, would be wholly within the skill of the art, and that this limitation of the claim does not render the claim inventive or patentable.

Considering the claims of group III, i.e., method claims 8, 10 and 11, it is submitted that these claims also are unpatentable over the Waldie patent, in view of the Root patents. As pointed out previously, the base oil used in the Waldie patent and in the application at bar is the same. The other ingredients, namely, the oil reactant, maleic acid anhydride, and the drier, are also the same. As pointed out by the trial court, what appellants have done is to add to the non-wrinkling oil or varnish base simultaneously that which previously had been added sequentially (15 A). Specifically, the sole difference in the method is that whereas in the patent the modifying ingredients are added sequentially, that is, the oil reactant, maleic acid anhydride, is added first while the oil is at a tempara-ture of about 550° F. and the drier is added afterward and when the mixture has cooled to about 400° F., in the process claimed herein, the same modifying ingredients are added simultaneously as a previously prepared mixture.

Appellants urge that the prior art does not show the step of adding the powder comprising an oil reactant and drier to the hot oil (Br. 14), and that it is this step which produces a different, beneficial and improved result, namely, a harder film (Br. 15), indicative of patentability (Br. 16).

That this step per se is not shown in the prior art is conceded, but that a different result is produced has not been shown. On the contrary, it is submitted that the final product of the patent is essentially the same as that produced by the claimed process, for in each a non-wrinkling oil is converted into a wrinkling composition by the chemical action thereon of maleic acid anhydride and a cobalt or manganese drier. No evidence was produced comparing the product of the patent with that of the application, to show what difference, if any, existed. The trial court held that "there was no showing that the product produced under the method claimed is substantially different from that produced under the prior art" (15 A). Since the materials are the same, and the operating conditions except for that detail produce a wrinkling composition, the reasonable presumption is, in the absence of any evidence to the contrary, that the final wrinkling compositions are the same. Where, as here, the result accomplished is the same or substantially the same, the rule is that steps or operations taken concurrently or simultaneously are the equivalent of and not patentable over steps taken successively. Asbestos Shingle v. Rock Fibre, 217 F. 56; In re White, 17 CCPA 365, 39 F. 2d 974. But even assuming that this step produces a harder wrinkled product, this would constitute no more than a difference in degree, which, even if it been considered an improvement over the product of the prior art, does not constitute patentable invention. Mere improvement alone is insufficient to justify the issuance of a patent; the improvement must be such as to emanate from that uncommon talent or creative genius called invention. Minn. Mining & Mfg. Co. v. Coe, 69 App. D. C. 217, 99 F. 2d 986; Standard Oil v. Marzall, 86 U. S. App. D. C. 210, 181 F. 2d 280.

All the claims here involved have been found to be unpatentable because of non-invention by the Patent Office tribunals and by the trial Court, the latter having specifically found that "the finding of the Patent Office that the claimed invention was fairly anticipated by the prior art is reasonable" (15 A). While appellants state that in law there is no such thing as a "reasonable" basis for rejection of claims (Br. 12) it has been settled rule of this Court that the finding of the trial Court against patentability will not be disturbed on appeal unless it is very clearly shown to be in error. Abbott v. Coe, 71 App. D. C. 195, 109 F. 2d 449; Radtke et al v. Coe, 74 App. D. C. 251, 122 F. 2d 937. In other words, unless the Court can say that in the present case the finding of the trial Court against patentability is not a reasonable one on the evidence, or that it is clearly erroneous, and that the evidence makes clear that the alleged improvement is the product of creative talent and ingenuity, not merely the skill of the art, the Court should affirm. Standard Oil v. Marzall, 86 U. S. App. D. C. 210; 181 F. 2d 280.

Finally, the Court's attention is directed to the following statements of the applicant who was plaintiffs' witness at the trial below:

(1) the definitions of the terms "non-conjugated oil" and "non-wrinkling oil" (43 A);

(2) the emphasis on the use of "raw" oil (66 A);

(3) the statement that a boiled oil is a non-wrinkling oil (67 A); and

(4) the admission by the witness in answer to the direct question of the Court that a boiled oil could not be used in making the composition of the application at bar (70 A).

In view of this testimony, it would appear that the claims of Groups II and III (5 to 11, inclusive) are unallowable for failure to point out particularly and to claim distinctly the improvement which is claimed to be inventive, as required by Sec. 4888 R. S. (35 U.S.C., sec. 33). If only a raw varnish oil is operable in the described process, then, it is clear that the claims before the Court fail to define the alleged contribution to the art, for no claim is expressly limited to the use of a raw varnish oil. Since this question of overclaiming is equally determinative of the ultimate question of whether appellants are entitled to a patent, it is thought that this Court in the exercise of its appellate jurisdiction should consider this evidence of record, in the event that the grounds advanced by the trial Court are considered insufficient to justify the dismissal of the complaint.

CONCLUSION

It is respectfully submitted that in the present case none of the claims at bar defines inventive and patentable subject matter; that the conclusions reached by the Patent Office tribunals and the trial Court as to non-patentability were correct and have a rational and reasonable basis in the record; and that the decision appealed from should be affirmed.

Respectfully submitted,

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No. 11,475

REPLY BRIEF FOR APPELLANTS

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

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v.

ROBERT C. WATSON
JOHN A. MARZALL, Commissioner of Patents, *Appellee.*

**Appeal from the United States District Court
for the District of Columbia**

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REPLY BRIEF FOR APPELLANTS

Statement of the Questions Presented.

The Commissioner has forgotten that the Congress of the United States has acted in the Patent Codification Act to make substantial and fundamental changes in the patent statutes, reversing the rulings of the Patent Office and even the Supreme Court of the United States and the subordinate courts.

In question (1), it states there is no invention in this case because the claims "define a mere mixture of chemicals known in the art as effective for the stated purpose, where the association thereof in the unitary mixture requires **no unusual talent . . .**"

The new Patent Codification Act carefully states that the ability, talent, brain or manner of the use of the intellect will have nothing to do with patentability. It says: "**Patentability shall not be negatived by the manner in which the invention was made.**" Title 35 U.S.C. § 103 (1952).

Therefore, the attempt to get away from the invention in the Commissioner's brief that Waldie displayed "no talent" and that what he did was a mere new use without value and was not invention, is contrary to the new Act.

In the first statement of questions presented the Commissioner states as a part of his premise that there was "no coaction or change in their respective functions", referring to the materials in the composition.

Contrast this statement with the District Court's finding on the last two lines of page 13A of the Appendix that "**The oil reactant and the texture producer react with each other upon being added to the heated oil.**" This is a complete refutation that there was no coaction or change in the composition when it was put to use.

The second statement of questions presented also has an erroneous premise in that it states there is nothing inventive "in the process of compounding the composition to add the modifying materials as a single mixture instead of separately, as in the prior art."

But the Patent Code states that preparing a composition of matter of old materials and applying them to a new use or using an old process for a new use, is invention. Title 35 U.S.C. § 100(b), (1952).

In the Commissioner's brief, page 12, it admits:

> "Appellants urge that the prior art does not show the step of adding the powder comprising an oil re-

actant and drier to the hot oil (Br. 14), and that it is this step which produces a different, beneficial and improved result, namely, a harder film (Br. 15), indicative of patentability (Br. 16).

> **"That this step per se is not shown in the prior art is conceded, but that a different result is produced has not been shown . . ."[1]**

Here again the Patent Codification Act applies. A discovery of a new use for old materials or a composition of matter or even an old process is now patentable even though the result be the same as heretofore achieved in connection with an old use. 35 U.S.C. § 100(b), (1952).

The reason for this statute is stated in the Journal of the Patent Office Society, August, 1952, Vol. 34, Number 8, pages 584-5, in which it says:

> ". . . The remainder of the definition clarifies the status of processes or methods which involve merely the new use of a known process, machine, manufacture, composition of matter, or material; they are processes or methods under the statute and may be patented provided the conditions for patentability are satisfied."

The Commissioner of Patents states the following as the rule (brief, p. 13):

> ". . . Mere improvement alone is insufficient to justify the issuance of a patent; the improvement must be such as to emanate from that uncommon talent or creative genius called invention. Minn. Mining & Mfg. Co. v. Coe, 69 App. D. C. 217, 99 F. 2d 986; Standard Oil v. Marzall, 86 U. S. App. D. C. 210, 181 F. 2d 280."

The Patent Code has now changed the rule that "the improvement must be of such as to emanate from that uncommon talent or creative genius called invention" because the new Code specifically reverses this kind of a definition and says "Patentability shall not be negatived by the manner in which the invention was made." Title 35 U.S.C. § 103.

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[1] Under the law you do not need to have a new result to have a new process. *Cochrane v. Badische,* 111 U.S. 293; *The Wood Paper Patent,* 23 Wall. 566.

For a process to be new or a composition of matter to be new, it is not essential that the result of the process or the result of the use of the composition of the matter must be new. *Cochrane v. Badische,* 111 U. S. 293; *The Wood Paper Patent,* 23 Wall. 566.

It is not necessary that the manner of Waldie's making the invention be by the use of "uncommon talent or creative genius." It makes no difference whether the Patent Office was "reasonable or unreasonable." (Appellee's brief, p. 14) In the new Code the personal characteristics of the inventor, his talent, genius, reasonableness or otherwise, are just as immaterial, as the status of his pocketbook has been under our law since the beginning.

The new law eliminates any consideration of patentability based upon how the invention was made which includes the "flash of genius, uncommon, unusual talent, creative genius or any other manner of achieving a result.

Error of Law on Patentable Combinations.

The Commissioner refers to *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, as authority for the fact that a mixture is unpatentable. Like most generalities, that is untrue.

A reference to the opinion shows that this case had a fundamental difference from the instant case.

Mr. Justice Douglas said:

> ". . . Bond discovered that there are strains of each species of root-nodule bacteria **which do not**

> **exert a mutually inhibitive effect on each other. . . .''** (p. 130)

That condition does not exist in this case. When the mixture forming the powder **was put to use it here reacted internally one on the other and reacted on the non-wrinkling oil and the associated chemcials to make a wrinkle finish.**

Commissioner's brief contains another misstatement both of fact and law. He says:

> ". . . **the alleged reaction** of the elements of the mixture upon each other when added to the hot oil is something **which is not described or disclosed in the application at bar . . .''** (p. 8)

He further says:

> ". . . the mixture have no coaction or cooperative relationship producing a new, useful and different utility . . ." (p. 8).

If there is no reaction between the elements of the powdered mixture when they are put to work as claimed by the Commissioner in his brief in order to bring this case within the scope of *Funk Bros. Seed Co. v. Kalo Inoculant Co.* case, **then it is strange that the District Court in the opinion said: "The oil reactant and the texture producer react with each other upon being added to the heated oil.''** (p. 13A)

The Judge's opinion makes this finding of fact contrary to the repeated statements to the contrary by Commissioner's counsel.

All that the *Funk v. Kalo* case held was that the two bacteria when mixed were *permanently non-reactive* and *at no time when put to use did they ever become reactive.* In this case, they become reactive according to the District Court.

Counsel for appellants in this case was counsel for the successful petitioner in *Funk v. Kalo* and has more than an ordinary knowledge of that case. The brief of the Commissioner is a misrepresentation as to the meaning of that piece of litigation.

This is fully shown by the statement in the concurring opinion of Mr. Justice Frankfurter, who distinguished from a case like this at bar from *Funk v. Kalo,* saying:

> ". . . **insofar as the court below concluded that the packaging of a particular mixture of compatible strains is an invention and as such patentable, I agree,** provided not only that a new and useful property results from their combination, but also that the particular strains are identifiable and adequately identified . . ." (333 U.S. 127, 133)

The opinion in *Funk v. Kalo,* in which seven of nine Justices concurred, found that a mixture would be patentable provided that it had a new and useful property that resulted from a combination and reaction, but that, in that particular case, the particular bacterium was not identifiable, was not adequately specified and never reacted.

In a contrast to this case, the District Court has made the finding: "The oil reactant and the texture producer react with each other upon being added to the heated oil." (p. 13A) This is exactly contrary to what the Commissioner's brief claims the Court below found.

The Commissioner's brief admits that there is no prior art showing this mixture, saying: **"it is of no patentable significance that the prior art does not describe the claimed mixture."** (pages 7-8)

The Commissioner's brief says:

> ". . . So long as there is no chemical combination or coaction between the components of the mixture, nor any new function or effect brought about by their association or aggregation therein, . . ." (p. 7)

there is no invention.

But the District Court has found that the two elements of the powdered mixture, the oil reactant and the texture producer did react upon being put to use. (p. 13A) So the foundation of the Commissioner's case disappears in view of this finding by the District Court.

The District Court further found:

> ". . . Basically then this alleged invention is the art of taking an oil reactant and a texture modifier (drier) and adding them *as a unit* to a heated non-wrinkling oil . . ." (p. 14A)

Therefore, the Court makes a finding that the mixture was added as a unit to a heated non-wrinkling oil and also finds that when this mixture of the oil reactant and the texture producer was added to the heated oil, it did react upon one another. (p. 13A)

With these findings of fact before you, you can see that the whole basis of the Commissioner's brief disappears, which is to the effect as stated in the brief of the Commissioner (p. 8) "the alleged reaction of the elements of the mixture upon each other when added to the hot oil is something which is not described or disclosed in the application at bar."

The Commissioner's brief is flatly contrary to the finding of the District Court. (p. 13A)

Referring to the applicant's disclosure in his application in the Patent Office, you will find that the foregoing statement (Commissioner's brief, p. 8), "that the alleged reaction of the elements of the mixture upon each other when added to the hot oil *is something which is not described or disclosed in the application at bar,*" is another misstatement to this Court.

Let us look at this application in the record starting at page 81A. It says:

> "This invention relates to wrinkle finishes and more particularly to a powder which, when added to

> a non-wrinkling oil or a non-wrinkling varnish base, produces wrinkling properties in the oil or varnish base." (p. 81A)

But this is only a small part of what is contained in the application which continues on page 82A in these words:

> "It is an object of this invention to produce *a dry powder mix* which, when *added to non-wrinkling oils* or coating compositions, *creates wrinkling properties therein.*" (R. 82A)

Then there follows a series of examples of the composition of the mixture and how it is applied to the hot oil and what is in the hot oil that is normally non-wrinkling which is thus made wrinkling. (82A-86A)

Keep in mind that this is the specification the Commissioner of Patents states in his brief (p. 8) "that the alleged reaction of the elements of the mixture upon each other when added to the hot oil is something which is not described or disclosed in the application at bar." On page 82A of the Appendix the applicant says:

> "Two pounds of maleic acid anhydride and one pound of manganese borate were mixed and ground together until a very fine granular, *uniformly mixed powder* was obtained."

This mixture was then added to the following :

> "In a separate vessel 50 pounds of Beckacite 1111, which is a maleic-treated rosin glycerine resin, were added to 8 gallons of varnish-grade linseed oil, and the mixture was then slowly heated to approximately 400° F. until the resin was fully dispersed. **Then about 2 pounds of the maleic acid anhydride-manganese borate powder was added and the mixture heated to 590° to 600° F. for approximately 30 minutes.** Thereafter the mixture was allowed to air-cool to approximately 350° F. when 10 gallons of high solvency petroleum naphtha and 0.75 gallons of Nuolate Cobalt 4% were added. The viscosity of the varnish

> thus obtained was Y as on the Gardner-Holdt scale." (82A)

Then at the end of the example the applicant explained how the addition of the powder to the hot non-wrinkling oil reacted with it to convert it from a non-wrinkling to a wrinkled coating composition. (p. 83A) The applicant said:

> "From the example set forth above it is obvious that **by the addition of the texture modifying powder, the varnish composition, which is made up from varnish grade linseed oil only and which per se would not yield a wrinkled film, had been converted into a wrinkle coating composition.**"

How could two things be mixed together and become a third, new composition unless there was a reaction? Both chemistry and common sense dictate to the contrary. The Commissioner's brief has stated exactly the contrary of what the specification shows.

The same statements are made in Examples IV, V and VI as to this "texture modifying powder" and its addition to the hot oils at a particular temperature so the reactions could take place. (pages 84A, 86A, 95A)

It is, therefore, apparent that there is clear foundation for the District Court's finding "**The oil reactant and the texture producer react with each other upon being added to the heated oil.**" (p. 13A) It is the foundation for the Court's finding that "Basically then this alleged invention is the art of taking an oil reactant and a texture modifier (drier) and adding them *as a unit* to a heated non-wrinkling oil." (p. 14A)

The Commissioner's brief is, therefore, contrary to the District Court's opinion and to the application itself.

The District Court did not hold that there was no reaction. His entire opinion is based upon the proposition that the prior art showed that these elements of the powder had been used independently in the prior art and the applicant had used them "as a unit" together. The Commissioner's brief is based upon a factual situation denied by the District Court's opinion and upon the reasoning of the District Court.

Error of Law as to Independent and Successive Reactions.

The second error of law of the District Court was that in chemistry the doing independently or successively instead of jointly are all the same thing. The cases cited in our main brief are to the contrary.

The case cited by the Commissioner of *Funk v. Kalo,* 333 U.S. 127, held to the contrary, that because of the **lack of the reaction at all times** between the two bacteria **there was no invention,** but the Court did indicate as pointed out plainly by both Mr. Justice Douglas and Mr. Justice Frankfurter that if there had been a reaction between them, as found in this case by the District Court (p. 13A), there would have been invention. In the *Funk case* everything was left as nature made it.

In this case, as the District Court has found, Waldie took these elements and had them *coact with one another* (p. 13A) upon being added to the heated oil and the specification points out that this reaction caused the non-wrinkling oil to wrinkle so you have two reactions here and none in *Funk v. Kalo.*

To have a good process you need not have a new product. *Holland Furniture Co. v. Perkins Glue Co.,* 227 U. S. 245.

To have a new product you need not have a novel process. *Cochrane v. Deener,* 94 U.S. 780.

Old ingredients may be used in a new combination to produce a new and useful result, as in this invention. *Seymour v. Osborne,* 11 Wall. 516.

Error as to Prior Waldie Patent.

There is another incorrect statement in Commissioner's brief (p. 10). It says "Admittedly, the base oil and the reactant of the patent are identical with those used in the instant case (57A)." The context shows that he is referring to the prior Waldie patent. This statement is misleading and, therefore, untrue because pages 58A and 59A show that the inventor Waldie specifically distinguished the present application from the prior Waldie patent because of the reactions that took place chemically that made a new combination. He said:

> "Q. Then, specifically, how does the chemical action of the oil reactant and the drier of your Waldie patent differ from the reaction of the oil reactant drier in your patent application? A. All of the materials in the patent application are definitely chemially combined with the oil or the varnish base. There is in the processing an insitu formation of cobalt maleate which reacts to the oil.
>
> "Q. Can you say from your experience whether you get any different result in the coating composition, film, that is produced? A. The coating composition of the (46) application will give a harder film than the prior patent.
>
> "Q. Can you say whether or not you find any disclosure in your prior Waldie patent that would teach the addition of an oil reactant and the drier to the coating composition at the same time? A. I do not.
>
> "Q. Is there any disclosure or teaching that you can find in that patent that would give anyone skilled in the art reason to believe that an addition of the oil reactant and the drier together would give any beneficial effect? A. No." (p. 59A)

If you read the Commissioner's brief (p. 10) you would get the impression that the Waldie and Root patents taught everything whereas the record itself, unrebutted, shows this not to be a fact.

The Commissioner's brief concedes, unwillingly, that there is invention (p. 11), saying "the composition claims sought are not expressly limited to or by the process of formation disclosed in the specification, it is submitted that **as worded** these claims do not patentably distinguish over the prior art."

It is a curious habit the Commissioner has in his brief, and in a companion case in this Court for the same appellants, that the last retreat is always because the language of the claims is not correct. The Patent Office had a full opportunity to function on this issue and settled this issue in the Patent Office. It is, therefore, estopped now to claim that the wording of the claims is not sufficiently definitive.

New Use

The patent Codification Act, Patents 35 U.S.C. § 100 (1952), states:

> "(b) The term 'process' means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material."

This statute applies as the applicable law of this case (§ 293, Sec. 4(a).). It says:

> ". . . It shall apply to further proceedings on applications pending on such date (January 1, 1953) and to patents granted on such applications except as otherwise provided. . ."

The instant application of Waldie in the claims for a process and for the new composition of matter is for a "new use" of the materials and process that were heretofore utilized in a different manner and were not used as in Waldie.

The Commissioner's brief concedes that there is no art showing the mixture per se as a dry powder and there is *no art showing the use of the dry powder* at a particular heat in a hot oil of non-wrinkling character and that the resulting reaction is used for getting a novel result. (p. 7-8)

There is no claim by the Commissioner in his brief that these particular things are found in the art. The only thing claimed is that in the prior two patents and one publication, the individual chemicals are found.

Now let us turn to the specification and see what it says about the *new use*. It says:

> "Heretofore, wrinkle coating compositions have been produced by using so-called wrinkling oils and/or by compounding the compositions by specific methods which have to be followed very strictly in order to obtain the results desired. Such wrinkling compositions used heretofore, however, have a number of drawbacks. In the first place, wrinkling oils are considerably more scarce and therefore more expensive than non-wrinkling oils. Furthermore, the preparation of wrinkle finishes by the customary methods, very often requires special skill and care so that the expense for highly skilled labor in the case of wrinkle finishes used to be pretty high.
>
> "It is an object of this invention to produce a dry powder mix which, when added to non-wrinkling oils or coating compositions, creates wrinkling properties therein.
>
> "It is another object of this invention to convert a non-wrinkling oil or varnish composition into materials of wrinkling characteristics by the mere addition of a powder mixture specifically compounded." (pages 81A and 82A.)

The foregoing brings this application within Title 35 U.S.C. § 100 (b), that the process, the composition of matter or material said to be found separately, while being used differently, in the prior art has been put together by the applicant for a new purpose and a new use as set forth in the specification.

The Learned District Court found (p. 15A):

> ". . . What the plaintiffs have done is add to a non-wrinkling oil or varnish simultaneously that which previously had been added sequentially . . ."

and, therefore, found that by making the combination and adding it while the oil was hot so there would be a reaction (p. 13A), there was a new use. To have a new use you do not need any new function or effect but you must use the materials in a new way. That the Commissioner's brief and the District Court's opinion could not find had been done by anyone else.

CONCLUSIONS

In conclusion the Commissioner's brief amounts to this:

(1) It admits that the art does not show the new use of the old materials in the new composition added as a unit into the hot oil to make a non-wrinkling oil wrinkle.

(2) The statement of the Commissioner that there is no proof of a reaction in the composition of matter is rebutted by the Court's finding to the contrary: "The oil reactant and the texture producer react with each other upon being added to the heated oil." (p. 13A)

(3) No one ever proposed to use these materials together and the test is, do they coact as the Court found when they are put to work? There is no requirement of law that a composition of matter shall start reacting immediately upon the elements being put together if there is no reason for doing so for the purpose at hand.

(4) It is unnecessary to produce a new result in order to have a novel composition of matter or a novel process or a patentable product.

(5) It is now against the law to defeat a patent on the ground that the manner of making the invention does not conform to some standard set up by the Court.

(6) It is unnecessary as the Commissioner would have it that Mr. Waldie have "unusual talent" or "uncommon talent" or "creative genius" or make his invention in any particular way.

(7) It is now the law that a new use of an old process, old materials, old composition of matter, is invention; and the Commissioner in his brief, as the Court below found, admits that there is no patent or publication that shows what Waldie did, of putting together these materials in a composition powder, introduce them into a non-wrinkling oil while it was hot and cause the non-wrinkling oil to wrinkle to produce a wrinkle finish. Having made that admission, under the new Code, the new use constitutes invention.

Respectfully submitted,

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Of Counsel

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 11,475

United States Court of Appeals
For the
District of Columbia Circuit
FILED APR 3 [illegible]
Joseph W. Stewart
CLERK

NEW WRINKLE, INC., and WILLIAM A. WALDIE,
Appellants,

v.

ROBERT C. WATSON, Commissioner of Patents,
Appellee.

PETITION FOR REHEARING

To the Honorable Judges of the United States Court of Appeals for the District of Columbia Circuit:

The appellants hereby respectfully petition the Court for rehearing of its decision and opinion of March 19, 1953, affirming the judgment of the Court below upon the following grounds.

I

STATEMENT

That the appellee has recognized that the Patent Codification Act, Title 35, U.S.C. (1952) is an entirely new Act and not merely a codification of existing statutes prior to the effective date of the Patent Codification Act by issuing complete new rules for the administration of the Act by the United States Patent Office dated January

1, 1953, a copy of which new rules is submitted with this Petition for Rehearing for the convenience of this Court.

The Journal of the Patent Office Society, Volume 34, Number 8, of August, 1952, a copy of which is attached hereto for the convenience of this Court, recognizes that the Patent Codification Act is an entirely new and different Act.*

The hearings before Congress, and not an isolated colloquy between Senators, show that the features of the Act upon which the appellants' relied were entirely new features not found in the previous statute, i.e., a new standard of invention not found in prior statutes.

II

PATENT OFFICE RECOGNIZES PATENT CODIFICATION HAS NEW FEATURES

We respectfully take the liberty of urging the Court to review its decision in the above entitled case No. 11,475 on which it bases its decision, among other things, upon a partial colloquy by the Senators Wiley, Saltonstall and McCarran containing a statement that there was no difference between the old and new law, as so quoted by this Court in a foot note to its opinion on page 3 of the companion appeal No. 11,403 and as noted on page 4 of its opinion in this case.

This colloquy is not supported by the Congressional hearings of three to four years nor by the comparison of the old statutes with the new Act. If it had been, there would be no necessity for the recognition by the appellee of these changes by issuing completely new

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*** New features of this Act are also set forth in an article entitled "The New Patent Statute: Congress Revitalizes The Patent System" by Carl B. Lutz of Pittsburgh Bar Association appearing in The Journal of American Bar Association March 1953, volume 39 pages 209 to 211.**

rules. There is also the recognition of these changes in the semi-official Journal of the Patent Office Society as to the admittedly new features of this Act, and an analysis of the Act supporting these changes.

If the Patent Office is wrong in its position under its new rules that this Act has many new features, then it is to the public interest to review and reaffirm, upon rehearing, the correct interpretation of this Act.

Therefore, your petitioner respectfully prays for a rehearing on this issue in view of its grave public importance. If all that the House of Representatives of the Congress accomplished in three or four years work on this subject together with a distinguished group of leaders of the Bar and industry testifying as to need of changes in the prior Patent Laws and on which testimony changes were made in the existing statutes as admitted and shown in the hearings and in the report on the bill, was a mere codification of existing laws, then such a simple procedure would seem not to justify such expenditure of time and effort by the Congress.

It seems difficult to conceive that the distinguished members of Congress of both Houses should have spent that amount of time to merely codify the existing statutes, in view of the extensive hearings and the resulting changes in the law. The Act itself, as heretofore pointed out in this case and in the record of the hearings on the bill and the Congressional report on it, show to the contrary.

The issue involved in this cause and its companion appeal are of grave moment to the nation. We, therefore, very respectfully take the liberty of requesting by this petition a rehearing on the subject at which time there can be fuller briefing, and argument if desired, of a more exhaustive nature than the short brief requested by the Court at the hearing of this cause.

CONCLUSION

We would, therefore, petition for this rehearing so that there will be a very full discussion of the subject based on more exhaustive explanation in an opinion by this Court, as we desire to file a Petition for Certiorari to the Supreme Court of the United States after this Court has heard us by brief and argument on a rehearing, if this Court does not agree with us.

Respectfully submitted,

....

Attorneys for Appellants

H. A. Toulmin, Jr.
F. E. Drummond
D. J. Hanlon, Jr.
Of Counsel:

CERTIFICATE OF COUNSEL

Pursuant to Rule 26, I hereby certify that this Petition for Rehearing is presented in good faith and not for delay.

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